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=> d his

     (FILE 'HOME' ENTERED AT 11:05:12 ON 16 SEP 2006)

     FILE 'REGISTRY' ENTERED AT 11:05:47 ON 16 SEP 2006
L1             STRUCTURE UPLOADED
L2           0 S L1 SSS SAM
L3           4 S L1 SSS FULL
L4             STRUCTURE UPLOADED
L5           7 S L4
L6         177 S L4 SSS FULL
L7             STRUCTURE UPLOADED
L8           0 S L7 SSS SAM
L9           9 S L7 SSS FULL

     FILE 'CAPLUS, MEDLINE' ENTERED AT 11:13:39 ON 16 SEP 2006
L10         67 S L6
L11          2 S L10 AND NANO?
L12          0 S L10 AND HYDROCARBON CHAIN?
L13          5 S L10 AND HYDROPHOBI?
L14          0 S L10 AND AGGREGAT?
L15          0 S L10 AND ?AGGREGAT?
L16          0 S GLYCOSIDE? (P) NANOSCALE? (P) OLIGOSACCHARIDE?
L17          5 S GLYCOSIDE? (P) NANOSCALE?
L18         12 S OLIGOSACCHARIDE? (P) NANOSCALE?
L19          1 S OLIGOSACCHARIDE? (P) NANO? (P) DERIVATIVE? (P) PHENYL?
L20         37 S OLIGOSACCHARIDE? (P) NANO? (P) DERIVATIVE?
L21          5 S CARDANOL GLYCO?
L22          0 S CARDANOL DISACCHARIDE?
L23          0 S CARDANOL OLIGOSACCHARIDE?
L24          0 S CARDANOL (P) OLIGOSACCHARIDE? (P) NANO?
L25          0 S CARDANOL (P) ?SACCHARIDE? (P) NANO?
L26          2 S CARDANOL (P) ?SACCHARIDE?
L27          0 S CARDANOL (P) LACTOSE
L28          0 S CARDANOL (P) SUCROSE
L29          0 S CARDANOL (P) FRUCTOSE
L30         14 S CARDANOL (P) NANO?
L31          4 S CARDANOL (P) NANOFIBER?
L32          1 S CARDANOL (P) NANOSCALE?
L33          2 S CARDANOL (P) AGGREGAT?
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L35         10 S CARDANOL (P) ?GLYCOLIPID?
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L37          2 S L36 NOT L35
L38         11 S CARDANYL? (P) NANO?
L39          2 S CARDANYL? (P) ?AGGREGAT?
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L43          1 S CARDANOL? (P) ?OLIGOSACCHARIDE?
L44          1 S CARDANYL? (P) ?OLIGOSACCHARIDE?
L45          0 S CARDANYL? (P) ?DISACCHARIDE?
L46          0 S CARDANYL? (P) ?TRISACCHARIDE?
L47          0 S CARDANOL? (P) ?DISACCHARIDE?
L48          0 S CARDOL? (P) LACTOSE
L49          2 S CARDOL? (P) SUCROSE
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=> d his

     (FILE 'HOME' ENTERED AT 11:05:12 ON 16 SEP 2006)

     FILE 'REGISTRY' ENTERED AT 11:05:47 ON 16 SEP 2006
L1               STRUCTURE UPLOADED
L2             0 S L1 SSS SAM
L3             4 S L1 SSS FULL
L4               STRUCTURE UPLOADED
L5             7 S L4
L6           177 S L4 SSS FULL
L7               STRUCTURE UPLOADED
L8             0 S L7 SSS SAM
L9             9 S L7 SSS FULL

     FILE 'CAPLUS, MEDLINE' ENTERED AT 11:13:39 ON 16 SEP 2006
L10           67 S L6
L11            2 S L10 AND NANO?
L12            0 S L10 AND HYDROCARBON CHAIN?
L13            5 S L10 AND HYDROPHOBI?
L14            0 S L10 AND AGGREGAT?
L15            0 S L10 AND ?AGGREGAT?
L16            0 S GLYCOSIDE? (P) NANOSCALE? (P) OLIGOSACCHARIDE?
L17            5 S GLYCOSIDE? (P) NANOSCALE?
L18           12 S OLIGOSACCHARIDE? (P) NANOSCALE?
L19            1 S OLIGOSACCHARIDE? (P) NANO? (P) DERIVATIVE? (P) PHENYL?
L20           37 S OLIGOSACCHARIDE? (P) NANO? (P) DERIVATIVE?
L21            5 S CARDANOL GLYCO?
L22            0 S CARDANOL DISACCHARIDE?
L23            0 S CARDANOL OLIGOSACCHARIDE?
L24            0 S CARDANOL (P) OLIGOSACCHARIDE? (P) NANO?
L25            0 S CARDANOL (P) ?SACCHARIDE? (P) NANO?
L26            2 S CARDANOL (P) ?SACCHARIDE?
L27            0 S CARDANOL (P) LACTOSE
L28            0 S CARDANOL (P) SUCROSE
L29            0 S CARDANOL (P) FRUCTOSE
L30           14 S CARDANOL (P) NANO?
L31            4 S CARDANOL (P) NANOFIBER?
L32            1 S CARDANOL (P) NANOSCALE?
L33            2 S CARDANOL (P) AGGREGAT?
L34            2 S CARDANOL (P) ?AGGREGAT?
L35           10 S CARDANOL (P) ?GLYCOLIPID?
L36           12 S CARDAN? (P) ?GLYCOLIPID?
L37            2 S L36 NOT L35
L38           11 S CARDANYL? (P) NANO?
L39            2 S CARDANYL? (P) ?AGGREGAT?
L40            2 S CARDOL? (P) NANO?
L41            1 S CARDOL? (P) GLYCOLIPID?
L42            1 S CARDOL? (P) ?OLIGOSACCHARIDE?
L43            1 S CARDANOL? (P) ?OLIGOSACCHARIDE?
L44            1 S CARDANYL? (P) ?OLIGOSACCHARIDE?
L45            0 S CARDANYL? (P) ?DISACCHARIDE?
L46            0 S CARDANYL? (P) ?TRISACCHARIDE?
L47            0 S CARDANOL? (P) ?DISACCHARIDE?
L48            0 S CARDOL? (P) LACTOSE
L49            2 S CARDOL? (P) SUCROSE
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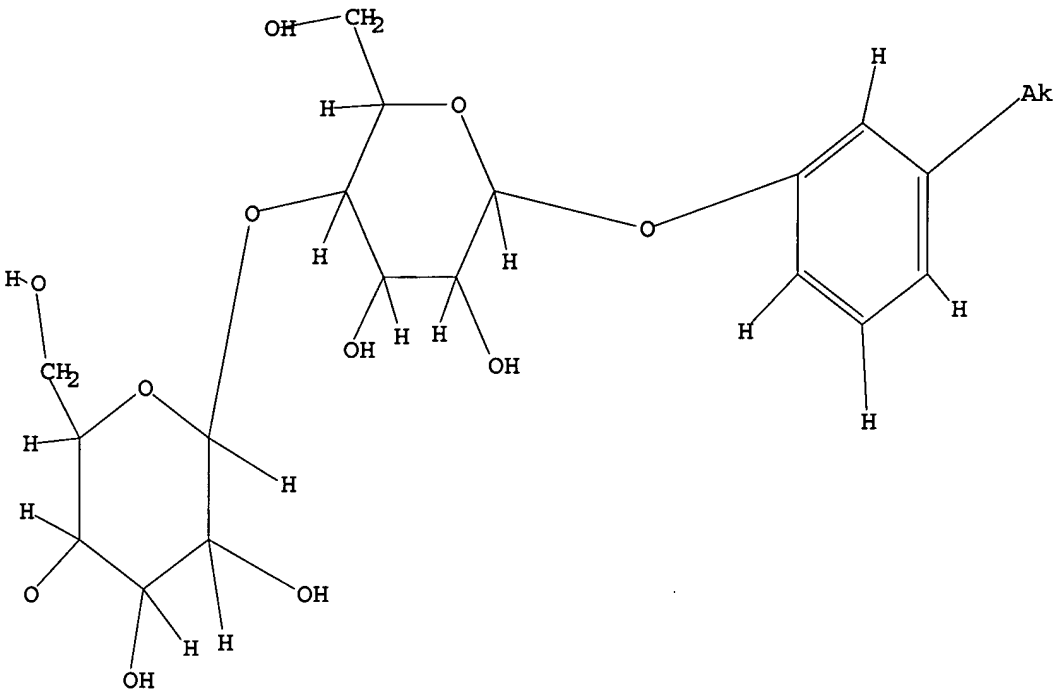

Structure attributes must be viewed using STN Express query preparation.

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SAMPLE SCREEN SEARCH COMPLETED - 3208 TO ITERATE

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INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 60763 TO 67557
PROJECTED ANSWERS: 0 TO 0

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FULL SEARCH INITIATED 11:06:23 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 65114 TO ITERATE

100.0% PROCESSED 65114 ITERATIONS 4 ANSWERS
SEARCH TIME: 00.00.02

L3 4 SEA SSS FUL L1

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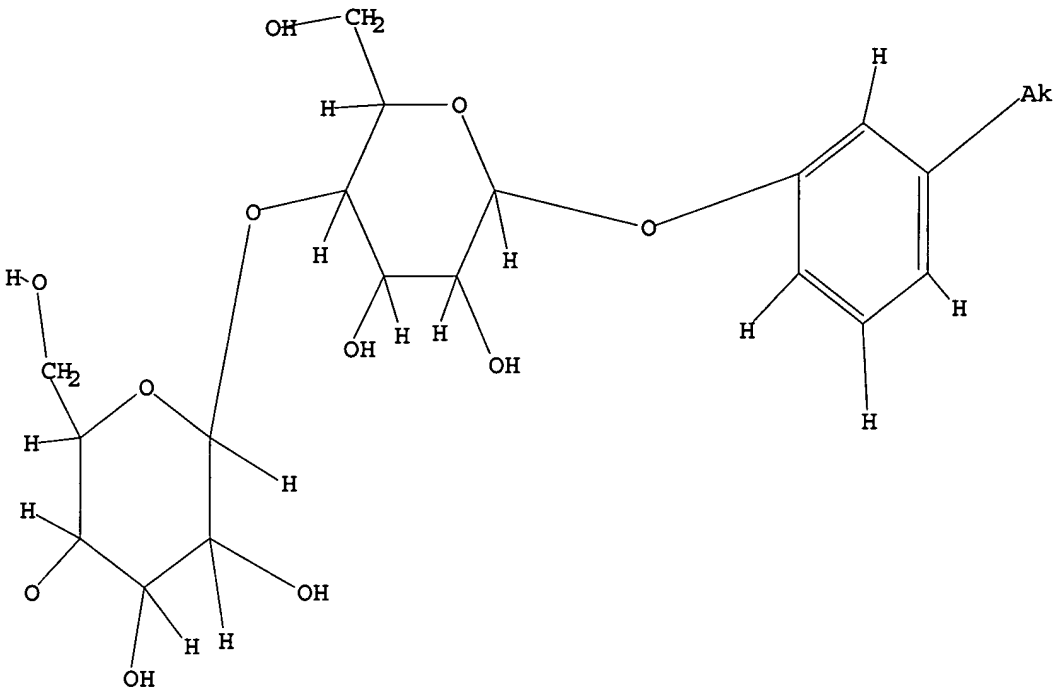
L1 STR



Structure attributes must be viewed using STN Express query preparation.

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L7 STRUCTURE UPLOADED

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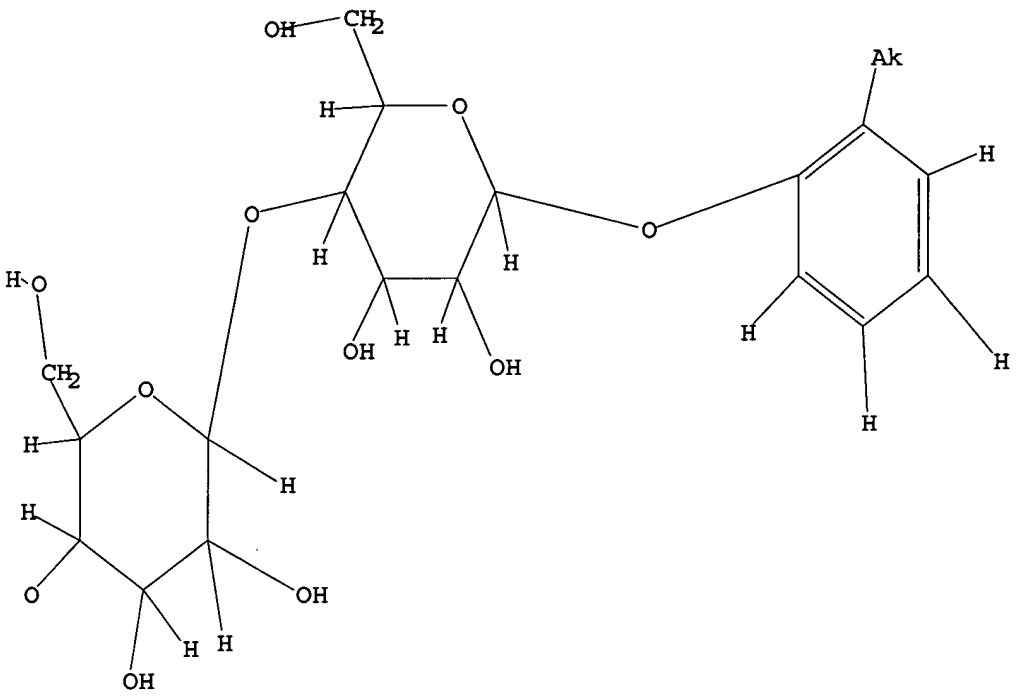
L7 STR



Structure attributes must be viewed using STN Express query preparation.

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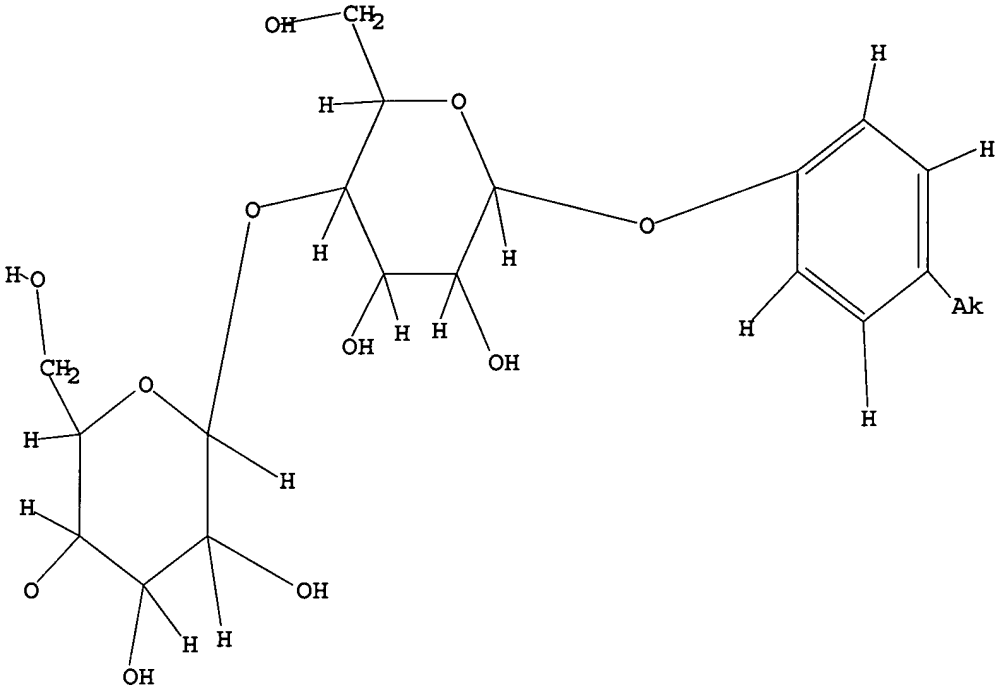
L4 HAS NO ANSWERS
L4 STR



Structure attributes must be viewed using STN Express query preparation.

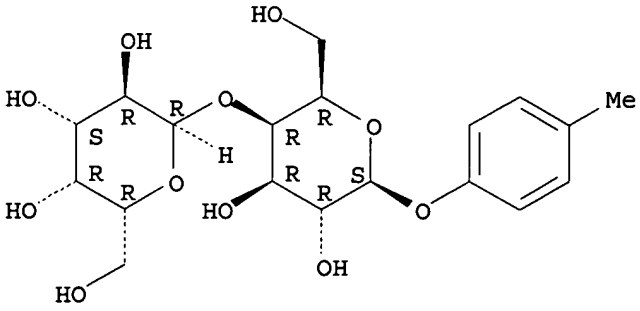
L11 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:168040 CAPLUS
DOCUMENT NUMBER: 142:406198
TITLE: Structure-activity relationships of galabioside derivatives as inhibitors of E. coli and S. suis adhesins: nanomolar inhibitors of S. suis adhesins
AUTHOR(S): Ohlsson, Joergen; Larsson, Andreas; Haataja, Sauli; Alajaeaeski, Jenny; Stenlund, Peter; Pinkner, Jerome S.; Hultgren, Scott J.; Finne, Jukka; Kihlberg, Jan; Nilsson, Ulf J.
CORPORATE SOURCE: Organic Chemistry, Lund University, Lund, SE-221 00, Swed.
SOURCE: Organic & Biomolecular Chemistry (2005), 3(5), 886-900
CODEN: OBCRAK; ISSN: 1477-0520
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 142:406198

AB Four collections of Galα1-4Gal derivs. were synthesized and evaluated as inhibitors of the PapG class II adhesin of uropathogenic Escherichia coli and of the PN and PO adhesins of Streptococcus suis strains. Galabiosides carrying aromatic structures at C1, methoxyphenyl O-galabiosides in particular, were identified as potent inhibitors of the PapG adhesin. Phenylurea derivatization at C3' and methoxymethylation at O2' of galabiose provided inhibitors of the S. suis strains type PN adhesin with remarkably high affinities (30 and 50 nM, resp.). In addition, quant. structure-activity relationship models for E. coli PapG adhesin and S. suis adhesin type PO were developed using multivariate data anal. The inhibitory lead structures constitute an advancement towards high-affinity inhibitors as potential anti-adhesion therapeutic agents targeting bacterial infections.

IT 579473-09-9P 850495-25-9P
RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(structure-activity relationships of galabioside derivs. as inhibitors of Escherichia coli and Streptococcus suis adhesins)

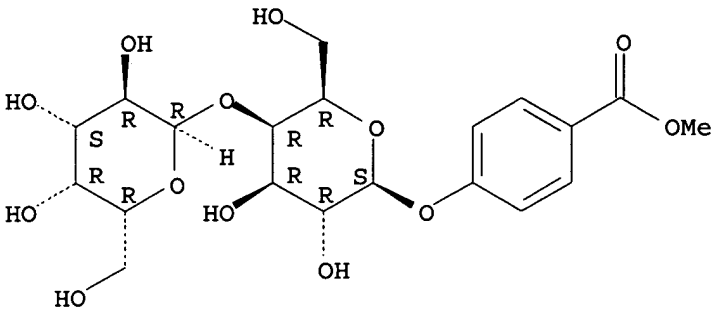
RN 579473-09-9 CAPLUS
CN β-D-Galactopyranoside, 4-methylphenyl 4-O-α-D-galactopyranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 850495-25-9 CAPLUS
CN Benzoic acid, 4-[(4-O-α-D-galactopyranosyl-β-D-galactopyranosyl)oxy]-, methyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1964:75584 CAPLUS
DOCUMENT NUMBER: 60:75584
ORIGINAL REFERENCE NO.: 60:13307e-g,13308a-f
TITLE: Pteridines. XXIX. Synthesis of pteridine 7-O- and N-8-glucosides. 1
AUTHOR(S): Pfleiderer, Wolfgang; Soell, Dieter
CORPORATE SOURCE: Tech. Hochschule, Stuttgart, Germany
SOURCE: Journal of Heterocyclic Chemistry (1964), 1(1), 23-7
CODEN: JHTCAD; ISSN: 0022-152X
DOCUMENT TYPE: Journal
LANGUAGE: German
GI For diagram(s), see printed CA Issue.
AB cf. CA 57, 11293i; 60, 5485c. The synthesis of both possible O- and N-glucosides of a pteridin-7-ol was reported. To 1 g. 4-dimethylamino-7(8H)-pteridin one (I) in 750 cc. boiling xylene was added 4.5 g. Ag_2CO_3 (Ag salt of I precipitated), the whole freed from H_2O by azeotropic distillation, 6 g. tetra-O-acetyl-D-glucopyranosyl bromide added, the mixture refluxed 1.5 hrs. with vigorous stirring, filtered hot, and the filtrate concentrated in vacuo to 50 cc. and cooled to give 2.06 g. 7(2,3,4,6-tetra-O-acetyl-β-D-glucopyranosyloxy)-4-dimethylaminopteridine (II), m. 229-30° (EtOH), [α]23D 97°. II (0.31 g.) in 60 cc. absolute MeOH was saturated with NH_3, the mixture evaporated, 10 cc. MeOH added, and the mixture kept 24 hrs. to give 105 mg. 7-(β-D-glucopyranosyloxy)-4-dimethylaminopteridine (III), m 275° (decomposition). A mixture of 27 g. 4-amino-6-dimethylamino 2-methylthiopyrimidine (IV), 25 g. D-glucose, and 15 cc. EtOH saturated with HCl was refluxed with 650 cc. absolute EtOH and 150 cc. absolute C_6H_6 72 hrs., distilled azeotropically (for H_2O removal), and chromatographed on 1300 g. Al_2O_3. Elution with EtOH gave 5 g. unreacted IV; elution with 3.5 l. H_2O gave 23 g. 4-β-D-glucopyranosylamino-2-methylthio-6-dimethylaminopyrimidine (V), m. 187° (H_2O), [α]23D -357°. To 3.7 g. V and 0.8 g. $NaNO_2$ in 150 cc. 50% EtOH at 10° 3 cc. AcOH was added and the mixture kept 24 hrs. at 0° to give 3.55 g. violet 4-β-D-glucopyranosylamino-6-dimethylamino-2-methylthio-5-nitrosopyrimidine (VI), m. 216°. 4-Amino-6-dimethylaminopyrimidine (VII) (19.9 g.), 23.4 g. D-glucose, and 10 cc. EtOH saturated with HCl was refluxed 100 hrs. in 600 cc. absolute EtOH and 200 cc. absolute C_6H_6 and worked up to give a little 4-β-D-glucopyranosylamino-6-dimethylaminopyrimidine (VIII), m. 202-3 ° (decomposition) (MeOH), [α]23D -403°. Chromatography of the mother liquor on Al_2O_3 with EtOH gave 7 g. VII, and with H_2O, 36 g. glassy product, containing VIII and D-glucose. To the above glass in 100 cc. H_2O was added 2,5-dichlorobenzenediazonium chloride (from 22 g. 2,5-dichloraniline, 500 cc. H_2O, 110 cc. concentrated HCl, and 9.2 g.

NaNO2) followed by immediate neutralization with saturated NaHCO3 solution, and the mixture kept 1 day to give 33.2 g. product which was acetylated to give 16.6 g. 4-(2,3,4,6-tetra-O-acetyl-β-D-glucopyranosylamino)-5-(2,5-dichlorophenylazo)-6-dimethylaminopyrimidine (IX), orange, m. 188-9° (absolute EtOH), [α]23D -1000°, and 15.1 g. isomer (X) of IX, brown glassy material, difficultly crystallized from EtOH to give dark brown-violet crystals, m. 136-8°, [α]23D -611°. IX (7 g.) and 55 g. Zn dust in 500 cc. boiling AcOEt was stirred vigorously, a mixture of 220 cc. AcOEt and 30 cc. AcOH added dropwise, and the mixture worked up to give 6.5 g. sirupy 5-amino-6-dimethylamino-4-(2,3,4,6-tetra-O-acetyl-β-D-glucopyranosylamino)pyrimidine (XI), still containing some 2,5-dichloraniline. To a fourth of this syrup in 10 cc. EtOH 1.5 g. Et acetal of Et glyoxalate was added, and the mixture refluxed 2 hrs. and worked up to give 0.175 g. 4-dimethylamino -7(8H)-8-(2,3,4,6-tetra-o-acetyl-β-D-glucopyranosyl)pteridinone (XII), yellow, m. 146-8° (EtOH), [α]23D -370°. To one-eighth of the above sirup (XI with 2,5-dichloraniline) in 5 cc. EtOH, 0.6 g. Et pyruvate was added and the mixture refluxed 2 hrs. to give 350 mg. 4-dimethylamino-6-methyl-7(8H)-8(2,3,4,6-tetra-O-acetyl-β-D-glucopyranosyl)pteridinone (XIII), m. 192-3°, yellow, m. 194-5° (EtOH), [α]23D -510°.

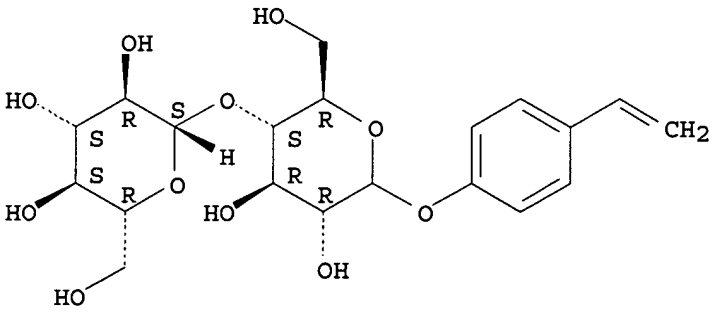
A solution of 425 mg. XIII in 50 cc. absolute MeOH was saturated under cooling with NH3, kept 2 hrs., evaporated in vacuo, and the residue dissolved in 4 cc. EtOH; after 24 hrs. 100 mg. yellow 4-dimethylamino-8-(β-D-glucopyranosyl)-6-methyl-7(8H)-pteridinone (XIV) crystallized, m. 216°. Rf values for the new compds. are given as obtained by descending chromatography on S&S 2043b paper with 2:1 BuOH-5H AcOH and 2:1 PrOH-1%NH3; also ultraviolet maximum were recorded.

IT 100336-75-2, Cellobioside, p-vinylphenyl, β-
(preparation of)

RN 100336-75-2 CAPLUS

CN Cellobioside, p-vinylphenyl (7CI) (CA INDEX NAME)

Absolute stereochemistry.



L17 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:763907 CAPLUS
DOCUMENT NUMBER: 142:256581
TITLE: Hyper-production of an isomalto-dextranase of an Arthrobacter sp. by a proteases-deficient Bacillus subtilis: sequencing, properties, and crystallization of the recombinant enzyme
AUTHOR(S): Hatada, Y.; Hidaka, Y.; Nogi, Y.; Uchimura, K.; Katayama, K.; Li, Z.; Akita, M.; Ohta, Y.; Goda, S.; Ito, H.; Matsui, H.; Ito, S.; Horikoshi, K.
CORPORATE SOURCE: Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Yokosuka, 237-0061, Japan
SOURCE: Applied Microbiology and Biotechnology (2004), 65(5), 583-592
CODEN: AMBIDG; ISSN: 0175-7598
PUBLISHER: Springer GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Arthrobacter globiformis T6 is unique in that it produces an enzyme yielding only isomaltose from dextran. In the present study, the organism was re-identified and its classification as a new species of the genus Arthrobacter, A. dextranlyticum, was proposed. The high G+C gene (66.8 mol) for the isomalto-dextranase was sequenced. The deduced amino acid sequence, with a calculated mol. mass of 65,993 Da (603 amino acids), was confirmed by nanoscale capillary liquid chromatog. coupled to tandem mass spectrometry, which covered 71.1 of the amino acid residues of the entire sequence. The enzyme was grouped into glycoside hydrolase family 27, and the C-terminal domain has homol. to carbohydrate-binding module family 6. Hyper-exoprodn. of the recombinant enzyme was achieved at a level corresponding to approx. 4.6 g/L of culture broth when proteases-deficient Bacillus subtilis cells were used as the host. The purified enzyme (65.5 kDa) had an optimal pH and temperature for activity of 3.5 and 60°, resp. It was crystallized using the sitting-drop vapor-diffusion method at 293 K.
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:220065 CAPLUS
DOCUMENT NUMBER: 140:254082
TITLE: Nanoscale polymerized hydrocarbon particles and methods of making and using such particles
INVENTOR(S): Kalantar, Thomas H.; Niu, Q. Jason; Tucker, Christopher J.; Domke, Christopher H.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 12 pp., Cont.-in-part of U.S. Pat. Appl. 2003 162,890.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004054111	A1	20040318	US 2003-366494	20030715
US 2003162890	A1	20030828	US 2002-77642	20020215
CN 1646570	A	20050727	CN 2003-808317	20030212
PRIORITY APPLN. INFO.:			US 2002-77642 B2	20020215

AB Crosslinked, polymerized hydrocarbon particles are characterized in that the particles have an average diameter <30 nm, the particles exhibit a volume swell factor ≤3.0; the composition is essentially free of metal ions, the particles have a polydispersity (polystyrene relative Mw/Mn) <3.0, and the

particles are characterized by a Mark-Houwink plot having a slope with an absolute value <0.4 for the peak mol. weight range. The nanoparticles having a weight average diameter <30 nm are made by emulsion polymerization in the absence of ionic components. Finally, the nanoparticles are used as thermally degradable components in making porous films.

L17 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:678850 CAPLUS
DOCUMENT NUMBER: 139:214907
TITLE: Nanoscale polymerized hydrocarbon particles and methods of making and using such particles
INVENTOR(S): Kalantar, Thomas H.; Niu, Qing Shan J.; Tucker, Christopher J.; Domke, Christopher H.
PATENT ASSIGNEE(S): Dow Global Technologies Inc., USA
SOURCE: PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003070777	A1	20030828	WO 2003-US4668	20030212
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZM, ZW				
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US 2003162890	A1	20030828	US 2002-77642	20020215
AU 2003217536	A1	20030909	AU 2003-217536	20030212
EP 1478669	A1	20041124	EP 2003-713487	20030212
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2005517772	T2	20050616	JP 2003-569684	20030212
CN 1646570	A	20050727	CN 2003-808317	20030212

PRIORITY APPLN. INFO.: US 2002-77642 A 20020215
WO 2003-US4668 W 20030212

AB This invention is cross-linked, hydrocarbon polymer particles which composition is characterized in that the particles have an average diameter of less than 30 nm, the particles exhibit a volume swell factor of no greater than 3.0; the composition is essentially free of metal ions; the particles have a polydispersity (polystyrene relative Mw/Mn) of less than 3.0, and the particles are characterized by a Mark-Houwink plot having a slope with an absolute value of less than 0.4 for the peak mol. weight range. The invention is also a method of making nanoparticles having a weight average diameter less than 30 nm by emulsion polymerization in the presence of nonionic surfactants and free radical initiators essential free of atoms other than C, H, N, and O (such as H2O2-ascorbic acid combination) and in the substantial absence of ionic components. Finally, the invention is a method of using such particles as thermally degradable components in making porous films.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:573636 CAPLUS

DOCUMENT NUMBER: 133:182757
TITLE: Use of nanoscale chitosans and/or chitosan derivatives
INVENTOR(S): Kropf, Christian; Fabry, Bernd; Foerster, Thomas; Wachter, Rolf; Reil, Stephan; Panzer, Claudia
PATENT ASSIGNEE(S): Cognis Deutschland G.m.b.H., Germany
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000047177	A1	20000817	WO 2000-EP720	20000129
W: AU, CA, CN, JP, KR, NZ				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1150655	A1	20011107	EP 2000-904985	20000129
EP 1150655	B1	20030917		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002536392	T2	20021029	JP 2000-598130	20000129
AT 249811	E	20031015	AT 2000-904985	20000129
ES 2208273	T3	20040616	ES 2000-904985	20000129

PRIORITY APPLN. INFO.: US 1999-119512P P 19990209
WO 2000-EP720 W 20000129

AB Chitosans and/or chitosan derivs. with particle diams. of 10-300 nm are useful in cosmetic and/or pharmaceutical formulations as moisturizers and film-forming agents. The particularly small size of the particles ensures that when applied topically, they rapidly penetrate into the stratum corneum of the skin or the keratin fibrils of the hair. Thus, chitosan nanoparticles 50-125 nm in diameter were prepared by rapid expansion of a supercrit. CO2 solution of chitosan at 200 bar and 175° into a 4 weight% aqueous solution of poly(vinyl alc.). A sunscreen cream was prepared containing Dehymuls PGPH 2.0, Lameform TGI 4.0, beeswax 3.0, Plantaren 818 5.0, dioctyl carbonate 5.0, Cetiol J 600 2.0, Cetiol OE 30, panthenol/bisabolol 1.2, chitosan nanoparticles 0.5, Neo Heliopan Hydro 3.0, Neo Heliopan BB 1.5, Neo Heliopan E 1000 5.0, Neo Heliopan AV 4.0, Uvinul T 150 2.0, 86% glycerin 5.0, preservative, and H2O to 100 weight%.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 5 OF 5 MEDLINE on STN
ACCESSION NUMBER: 2004466800 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15248038
TITLE: Hyper-production of an isomalto-dextranase of an Arthrobacter sp. by a proteases-deficient Bacillus subtilis: sequencing, properties, and crystallization of the recombinant enzyme.
AUTHOR: Hatada Y; Hidaka Y; Nogi Y; Uchimura K; Katayama K; Li Z; Akita M; Ohta Y; Goda S; Ito H; Matsui H; Ito S; Horikoshi K
CORPORATE SOURCE: Japan Agency for Marine-Earth Science and Technology, 2-15 Natsushima, 237-0061, Yokosuka.
SOURCE: Applied microbiology and biotechnology, (2004 Oct) Vol. 65, No. 5, pp. 583-92. Electronic Publication: 2004-07-10. Journal code: 8406612. ISSN: 0175-7598.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AB117514; GENBANK-AB117515

ENTRY MONTH: 200503
ENTRY DATE: Entered STN: 21 Sep 2004
Last Updated on STN: 16 Mar 2005
Entered Medline: 15 Mar 2005

AB Arthrobacter globiformis T6 is unique in that it produces an enzyme yielding only isomaltose from dextran. In the present study, the organism was re-identified and its classification as a new species of the genus Arthrobacter, A. dextranlyticum, was proposed. The high G+C gene (66.8 mol%) for the isomalto-dextranase was sequenced. The deduced amino acid sequence, with a calculated molecular mass of 65,993 Da (603 amino acids), was confirmed by nanoscale capillary liquid chromatography coupled to tandem mass spectrometry, which covered 71.1% of the amino acid residues of the entire sequence. The enzyme was grouped into glycoside hydrolase family 27, and the C-terminal domain has homology to carbohydrate-binding module family 6. Hyper-exoproduction of the recombinant enzyme was achieved at a level corresponding to approximately 4.6 g l(-1) of culture broth when proteases-deficient Bacillus subtilis cells were used as the host. The purified enzyme (65.5 kDa) had an optimal pH and temperature for activity of 3.5 and 60 degrees C, respectively. It was crystallized using the sitting-drop vapor-diffusion method at 293 K.

L18 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:763512 CAPLUS
DOCUMENT NUMBER: 145:205781
TITLE: Electrokinetic molecular separation in nanoscale fluidic channels
INVENTOR(S): Lopez, Gabriel P.; Brueck, Steve R. J.; Ista, Linnea K.; Garcia, Anthony L.; Petsev, Dmiter N.; Bisong, Paul; O'Brien, Michael J.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 12 pp., which
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2006169587	A1	20060803	US 2004-958113		20041004
PRIORITY APPLN. INFO.:			US 2004-538862P	P	20040122
			US 2004-589200P	P	20040719

AB The present invention provides a method for separation of mixts. in fluidic systems through electrokinetic transport by use of nanochannels when the fluidic systems approach the size of an elec. double layer, thereby allowing separation based on charge. The disclosed apparatus comprises a T-chip with a nanochannel section. The method and apparatus are useful for separation of many mol. species, including peptides, proteins, and DNA.

L18 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:861657 CAPLUS
DOCUMENT NUMBER: 143:362715
TITLE: Separation and Analysis of Nanomole Quantities of Heparin Oligosaccharides Using On-Line Capillary Isotachophoresis Coupled with NMR Detection
AUTHOR(S): Korir, Albert K.; Almeida, Valentino K.; Malkin, Douglas S.; Larive, Cynthia K.
CORPORATE SOURCE: Department of Chemistry, University of Kansas, Lawrence, KS, 66045, USA
SOURCE: Analytical Chemistry (2005), 77(18), 5998-6003
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Glycosaminoglycans (GAGs) are important in a number of biol. processes and are structurally altered in many pathol. conditions. The complete determination of GAG primary structures has been hampered by the lack of sensitive and specific anal. techniques. NMR spectroscopy (NMR) is a powerful tool for GAG structure elucidation despite its relatively poor limits of detection. Solenoidal microcoils have greatly enhanced the mass limits of detection of NMR, enabling the online coupling of microsepn. and concentration techniques such as capillary isotachophoresis (cITP), which can sep. and concentrate analytes by 2-3 orders of magnitude. The authors have successfully used cITP coupled with online NMR detection to sep. and concentrate nanomole quantities of heparin oligosaccharides. This sensitive online measurement approach has the potential to provide new insights into the relationships between biol. function and GAG microstructures.
REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:563382 CAPLUS
DOCUMENT NUMBER: 141:93033
TITLE: Lower saccharide additives for sinterable nanoscale ceramic powders
INVENTOR(S): Schilling, Christopher H.; Tomasik, Piotr; Sikora, Marek
PATENT ASSIGNEE(S): The United States of America as Represented by the United States Department of Energy, USA
SOURCE: U.S., 7 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6761761	B1	20040713	US 2001-836168	20010418
PRIORITY APPLN. INFO.:			US 2000-199125P P	20000424

AB A ceramic composition having at least one nanoscale ceramic powder, at least one lower saccharide, and water. A moldable aqueous formulation for a ceramic composition having volumetrically uniform porosity and low interparticle contact friction, comprises at least one nanometric ceramic powder capable of withstanding kiln firing, at least one lower saccharide having up to six saccharide units, and water. The nanometric ceramic powder is selected from WC, SiO2, CeO2, TiO2, Al2O3, FeO, and Sb2O3. The lower saccharide is selected from sugar alcs., monosaccharides, disaccharides, trisaccharides, tetrasaccharides, hexoses, pentoses, and oligosaccharides. The composition is useful in many industrial applications, including preparation of stronger and substantially defect-free green and sintered ceramic bodies.
REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:510135 CAPLUS
DOCUMENT NUMBER: 141:59232
TITLE: Use of nanoscale hydrogels in cosmetic compositions against wrinkles, rough and dry skin
INVENTOR(S): Banowski, Bernhard; Jekel, Maren
PATENT ASSIGNEE(S): Henkel Kgaa, Germany
SOURCE: Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1430906	A2	20040623	EP 2003-28015	20031206
EP 1430906	A3	20060531		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
DE 10258960	A1	20040701	DE 2002-10258960	20021216
PRIORITY APPLN. INFO.:			DE 2002-10258960 A	20021216

AB The invention concerns the use of nanoscale hydrogels in cosmetic compns. against wrinkles, rough and dry skin that are of 1-1000 nm medium diameter and have a lower critical solution temperature of 28-38°C. Polymer hydrogels are applied; they are selected from the group of poly-N-isopropylacrylamide, polyvinylether, polyacrylates, polymethacrylate, polymethacrylamide, polyurethanes, polyvinylpyrrolidone, polyvinylalc., their copolymers, hydroxyalkylated polysaccharides and cellulose ethers. The compns. further contain fillers, polysiloxanes,

effect pigments, sunscreens, protein hydrolyzates, monosaccharides, oligosaccharides, polysaccharides, α-hydroxycarboxylic acids and α-keto carboxylic acids. Polymeric fillers are prepared from monomers e.g. acrylic acid, methacrylic acid, itaconic acid, maleic acid and their esters. Thus a mixture of 470 g water, 7g N-isopropylacrylamide, 0.35 g N,N-methylenebisacrylamide and 0.094 sodium dodecyl sulfate was prepared; the mixture was heated under nitrogen atmospheric to 70°C; 28 g potassium peroxysulfate in 30 mL water was added. The polymer product was dialyzed against water to obtain a hydrogel suspension; particles size at 20°C was 100-200 nm. A cosmetic hydrogel composition contained (weight/weight%): thistle oil 3.0; Myritol PC 3.5; Lanette 22 3.0; Cutina GMS-V 3.0; Stenol 16/18 2.0; isopropylstearate 6.0; Baysilon M350 1.0; DC 9040 0.5; Controx KS 0.05; Parsol 1789 2.0; Parsol MCX 3.0; Eusolex 6300 3.0; Uvinul T 150 2.5; propylparaben 0.2; glycerin 5.0; honey 0.5; methylparaben 0.2; Hibiscin HP-LS-9198 3.0; Granlux MSN 50 2.5; citric acid 0.1; Lipochroman-6 0.01; retinol 0.1; magnesium aspartate 0.2; Sepigel 305 2.0; 20% solution of poly-N-isopropylacrylamide gel 5; water to 100.

L18 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:174656 CAPLUS
DOCUMENT NUMBER: 140:299829
TITLE: Fully automated chip-based mass spectrometry for complex carbohydrate system analysis
AUTHOR(S): Zamfir, Alina; Vakhrushev, Sergey; Sterling, Alistair; Niebel, Hans Joerg; Allen, Mark; Peter-Katalinic, Jasna
CORPORATE SOURCE: Biomedical Analysis Institute for Medical Physics and Biophysics, University of Muenster, Norwich, UK
SOURCE: Analytical Chemistry (2004), 76(7), 2046-2054
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Carbohydrates represent a major class of biopolymers, which occur in nature either as oligosaccharides or glycoconjugates, in which the sugar moiety is linked to proteins or lipids. The significance of mass spectrometry for highly sensitive anal. of complex carbohydrates increased after the introduction of the electrospray ionization and matrix assisted laser desorption/ionization methods and the possibility of tandem MS for sequencing of single mol. species in complex mixts. Rapid and sensitive characterization of carbohydrates in biol. systems by automated nanoscale liquid delivery and chip-based electrospray interface techniques have not been developed so far. In this contribution, the implementation and optimization of a fully automated chip-based nanoelectrospray assembly (NanoMate system), operating in the neg. ion mode, in combination with QTOF-tandem MS for mapping/sequencing and computer-assisted structure assignment for carbohydrate components in complex mixts. is presented.
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:20822 CAPLUS
DOCUMENT NUMBER: 140:89683
TITLE: Shear stress responses of cell adhesion molecules and their use as bond stress-enhanced nanoscale binding switches
INVENTOR(S): Vogel, Viola; Thomas, Wendy; Forero, Manu; Sokurenko, Evgeni
PATENT ASSIGNEE(S): University of Washington, USA
SOURCE: PCT Int. Appl., 127 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004003160	A2	20040108	WO 2003-US20434	20030627
WO 2004003160	A3	20040715		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003256329	A1	20040119	AU 2003-256329	20030627
US 2004067544	A1	20040408	US 2003-607834	20030627
PRIORITY APPLN. INFO.:			US 2002-392467P P	20020627
			WO 2003-US20434 W	20030627

AB The changes in the strength of binding between an adhesion mol. and its ligand in response to forces including shear stress are used as a sensor and switch in nanodevices. The adhesion mols. and their ligands of this invention bind more tightly when a force-activated bond stress, such as shear force, applied to the adhesion mols. is increased, and bond less tightly when the stress is decreased. The adhesion mols. can be isolated from their sources in nature or can remain attached to their natural sources. They can be engineered, e.g., by altering their amino acid sequences or by binding to antibodies or other particles, to alter their binding properties. They can be attached to a wide range of substrates including particles and device surfaces to form adhesive systems which are capable of sticking to other particles and/or device surfaces to which ligands for the adhesion mols. have been attached. The adhesion mols. and ligands described herein can be used to control binding and release of components of an adhesive system by increasing or decreasing the force-activated bond stresses applied to the adhesion mols. Uropathogenic Escherichia coli variants with different performances in hemagglutination tests were assayed for their ability to hemagglutinate under stress. Shear stress also increased the kinetics of binding (on-rate) and lowered the rate of dissociation (off-rate). Increasing the viscosity of the solution to increase shear stress also increased the binding. Structure modeling identified flexible linkers that played a role in shear-dependent changes in protein behavior. Increasing the flexibility of the linker by eliminating hydrogen bonding resulted in lowering the shear stress at which the binding increased.

L18 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:1011273 CAPLUS
DOCUMENT NUMBER: 140:160062
TITLE: Normal-phase nanoscale liquid chromatography-mass spectrometry of underivatized oligosaccharides at low-femtomole sensitivity
AUTHOR(S): Wuhrer, Manfred; Koeleman, Carolien A. M.; Deelder, Andre M.; Hokke, Cornelis H.
CORPORATE SOURCE: Department of Parasitology, Center of Infectious Diseases, Leiden University Medical Center, Leiden, 2300, Neth.
SOURCE: Analytical Chemistry (2004), 76(3), 833-838
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal

LANGUAGE: English

AB We here describe the online liquid chromatog. (LC) electrospray ionization mass spectrometry (MS) of underivatized glycans using a nanoscale normal-phase amide column at a flow rate of 300 nL/min. Retention on the amide column is based on polar interactions of the oligosaccharide hydroxyl groups with the stationary phase, and thus, the retention time predictably increases with elongation of the oligosaccharide chain. The system is characterized by its high chromatog. resolution, which routinely allows the separation of isobaric structures. Separation of oligosaccharide mixts. over a 1-h range permits the detailed characterization of the different species by multiple ion selection and fragmentation steps using ion trap MS. The here presented miniaturization of the online-LC system to the nanoscale in combination with ion trap MS allows the detection of oligosaccharide species in a mixture at low-femtomole sensitivity. Online normal-phase nano-LC-MS of complex oligosaccharide mixts. further facilitates the sensitive and detailed structural anal. of oligosaccharides by overcoming the need for cumbersome and time-consuming derivatization procedures such as reductive amination for labeling with hydrophobic fluorophores or labeling with tritium. The method should be useful for the sensitive and quick anal. of glycosylation patterns and individual oligosaccharides from biotechnol. produced glycoproteins as well as scarcely available biol. samples.

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:186330 CAPLUS

TITLE: Detailed characterization of protein glycosylation using a combined approach of nanoscale data-dependent LC/MS/MS and MS/MS of methylated oligosaccharides

AUTHOR(S): Sheeley, Douglas M.

CORPORATE SOURCE: Division of Biomedical Technology, National Center for Research Resources, The National Institutes of Health, Bethesda, MD, 20892-7965, USA

SOURCE: Abstracts of Papers, 223rd ACS National Meeting, Orlando, FL, United States, April 7-11, 2002 (2002), CARB-085. American Chemical Society: Washington, D. C.
CODEN: 69CKQP

DOCUMENT TYPE: Conference; Meeting Abstract

LANGUAGE: English

AB Digests of several recombinant glycoproteins were characterized using a nanoscale capillary LC system coupled directly to the nanoelectrospray source of a Q-Tof mass spectrometer. Data-dependent LC/MS/MS was employed to generate MS/MS spectra for all major peptides and glycopeptides in the samples. Peptide, glycotype, and glycoform assignments were made manually based on MS/MS and survey spectra. Spectra for a given glycotype are virtually identical in the region below m/z 600, and at higher m/z show a distinctive pattern of glycan sequence-related fragment ions. Combinations of sugar-related ions were used to unambiguously assign glycotypes to specific peptides. Released oligosaccharides were sequenced by MS/MS and MSn to confirm assignments and provide details of branching and linkage position. MS(n) of released glycans provides structural information complementary to site-specific profiling by LC/MS/MS. Spectra generated by data-dependent LC/MS/MS allow us to go beyond inference of the presence of carbohydrate, to unambiguously identify glycopeptides using peptide fragment ions, classify the glycotype of attached carbohydrate chains according to their fragment ion "fingerprint", assign glycoform distributions using the MS survey spectra generated prior to MS/MS, and assign partial sequences to the oligosaccharides based on the series of sequence-related fragment ions generally observed

L18 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:720309 CAPLUS
DOCUMENT NUMBER: 127:341225
TITLE: High-Sensitivity Analysis of Neutral Underivatized Oligosaccharides by Nanoelectrospray Mass Spectrometry
AUTHOR(S): Bahr, Ute; Pfenninger, Anja; Karas, Michael; Stahl, Bernd
CORPORATE SOURCE: Division for Instrumental Analytical Chemistry, JW Goethe University, Frankfurt, 60590, Germany
SOURCE: Analytical Chemistry (1997), 69(22), 4530-4535
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Nanoscale electrospray ionization (nano-ESI) overcomes the sensitivity problems found and reported for neutral oligosaccharides in conventional microliter forced-flow ESI. For compds. ranging from trisaccharides to larger polymers with mol. masses up to 6 kDa, sample concns. of 10-5 M, i.e., 10 pmol total sample load, yielded very intense singly or multiply cationized mol. ions in an ion-trap mass spectrometer. In a dilution series, it is exemplified that, at the 10-8 M level, mol. ion signals can be clearly registered with a S/N ratio of .apprx.7. Only 100 amol of sample was consumed in this experiment Study of an oligosaccharide-peptide mixture revealed that the oligosaccharide is suppressed in conventional ESI, whereas in nano-ESI both analytes are detected at comparable and high intensities. Mechanistic implications are discussed, emphasizing the influence of surface activity for the two ESI techniques. The very low flow rates inherent to nano-ESI of .apprx.30 nL/min, together with the high signal intensity, make it possible to fully employ the MSn capabilities of an ion-trap mass spectrometer for structural anal. From <1 μL of sample solution, it is possible to make consecutive fragmentation expts. up to MS7 to obtain valuable information about the structure of complex oligosaccharides.
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 10 OF 12 MEDLINE on STN
ACCESSION NUMBER: 2004160105 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15053670
TITLE: Fully automated chip-based mass spectrometry for complex carbohydrate system analysis.
AUTHOR: Zamfir Alina; Vakhrushev Sergey; Sterling Alistair; Niebel Hans Jorg; Allen Mark; Peter-Katalinic Jasna
CORPORATE SOURCE: Biomedical Analysis, Institute for Medical Physics and Biophysics, University of Munster, Germany.
SOURCE: Analytical chemistry, (2004 Apr 1) Vol. 76, No. 7, pp. 2046-54.
Journal code: 0370536. ISSN: 0003-2700.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200502
ENTRY DATE: Entered STN: 1 Apr 2004
Last Updated on STN: 4 Feb 2005
Entered Medline: 3 Feb 2005
AB Carbohydrates represent a major class of biopolymers, which occur in nature either as oligosaccharides or glycoconjugates, in which the sugar moiety is linked to proteins or lipids. The significance of mass spectrometry for highly sensitive analysis of complex carbohydrates increased after the introduction of the electrospray ionization and matrix assisted laser desorption/ionization methods and the possibility of tandem

MS for sequencing of single molecular species in complex mixtures. Rapid and sensitive characterization of carbohydrates in biological systems by automated nanoscale liquid delivery and chip-based electrospray interface techniques have not been developed so far. In this contribution, the implementation and optimization of a fully automated chip-based nanoelectrospray assembly (NanoMate system), operating in the negative ion mode, in combination with QTOF-tandem MS for mapping/sequencing and computer-assisted structure assignment for carbohydrate components in complex mixtures is presented.

L18 ANSWER 11 OF 12 MEDLINE on STN
ACCESSION NUMBER: 2004050211 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14750882
TITLE: Normal-phase nanoscale liquid chromatography-mass spectrometry of underivatized oligosaccharides at low-femtomole sensitivity.
AUTHOR: Wuhrer Manfred; Koeleman Carolien A M; Deelder Andre M; Hokke Cornelis H
CORPORATE SOURCE: Department of Parasitology, Center of Infectious Diseases, Leiden University Medical Center, P.O. Box 9600, 2300 RC Leiden, The Netherlands.. m.wuhrer@lumc.nl
SOURCE: Analytical chemistry, (2004 Feb 1) Vol. 76, No. 3, pp. 833-8.
Journal code: 0370536. ISSN: 0003-2700.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200409
ENTRY DATE: Entered STN: 31 Jan 2004
Last Updated on STN: 1 Oct 2004
Entered Medline: 30 Sep 2004

AB We here describe the online liquid chromatography (LC) electrospray ionization mass spectrometry (MS) of underivatized glycans using a nanoscale normal-phase amide column at a flow rate of 300 nL/min. Retention on the amide column is based on polar interactions of the oligosaccharide hydroxyl groups with the stationary phase, and thus, the retention time predictably increases with elongation of the oligosaccharide chain. The system is characterized by its high chromatographic resolution, which routinely allows the separation of isobaric structures. Separation of oligosaccharide mixtures over a 1-h range permits the detailed characterization of the different species by multiple ion selection and fragmentation steps using ion trap MS. The here presented miniaturization of the online-LC system to the nanoscale in combination with ion trap MS allows the detection of oligosaccharide species in a mixture at low-femtomole sensitivity. Online normal-phase nano-LC-MS of complex oligosaccharide mixtures further facilitates the sensitive and detailed structural analysis of oligosaccharides by overcoming the need for cumbersome and time-consuming derivatization procedures such as reductive amination for labeling with hydrophobic fluorophores or labeling with tritium. The method should be useful for the sensitive and quick analysis of glycosylation patterns and individual oligosaccharides from biotechnologically produced glycoproteins as well as scarcely available biological samples.

L18 ANSWER 12 OF 12 MEDLINE on STN
ACCESSION NUMBER: 1998043143 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9375514
TITLE: High-sensitivity analysis of neutral underivatized oligosaccharides by nanoelectrospray mass spectrometry.
AUTHOR: Bahr U; Pfenninger A; Karas M; Stahl B
CORPORATE SOURCE: Division for Instrumental Analytical Chemistry, JW Goethe University, Frankfurt, Germany.

SOURCE: Analytical chemistry, (1997 Nov 15) Vol. 69, No. 22, pp. 4530-5.
Journal code: 0370536. ISSN: 0003-2700.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199712
ENTRY DATE: Entered STN: 16 Jan 1998
Last Updated on STN: 16 Jan 1998
Entered Medline: 30 Dec 1997

AB Nanoscale electrospray ionization (nano-ESI) overcomes the sensitivity problems found and reported for neutral oligosaccharides in conventional microscale forced-flow ESI. For a series of compounds ranging from trisaccharides to larger polymers with molecular masses up to 6 kDa, sample concentrations of 10(-5) M, i.e., 10 pmol total sample load, yielded very intense singly or multiply cationized molecule ions in an ion-trap mass spectrometer. In a dilution series, it is exemplified that, at the 10(-8) M level, molecule ion signals can be clearly registered with a S/N ratio of about 7. Only 100 amol of sample has been consumed in this experiment. Investigation of an oligosaccharide-peptide mixture revealed that the oligosaccharide is suppressed in conventional ESI, whereas in nano-ESI both analytes are detected at comparable and high intensities. Mechanistic implications are discussed, emphasizing the influence of surface activity for the two ESI techniques. The very low flow rates inherent to nano-ESI of about 30 nL/min, together with the high signal intensity, make it possible to fully employ the MSn capabilities of an ion-trap mass spectrometer for structural analysis. From less than 1 microL of sample solution it is possible to make consecutive fragmentation experiments up to MS7 to obtain valuable information about the structure of complex oligosaccharides.

L20 ANSWER 17 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:491556 CAPLUS
DOCUMENT NUMBER: 131:272116
TITLE: Structural Characterization of Chemically Derivatized Oligosaccharides by Nanoflow Electrospray Ionization Mass Spectrometry
AUTHOR(S): Mo, Wenjun; Sakamoto, Hiroko; Nishikawa, Atsushi; Kagi, Noriko; Langridge, James I.; Shimonishi, Yasutsugu; Takao, Toshifumi
CORPORATE SOURCE: Institute for Protein Research, Osaka University, Osaka, 565-0871, Japan
SOURCE: Analytical Chemistry (1999), 71(18), 4100-4106
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Oligosaccharides released from several glycoproteins were derivatized with either 4-aminobenzoic acid 2-(diethylamino)ethyl ester (ABDEAE) (Yoshino, K.; et al. Anal. Chemical 1995, 67, 4028-4031) or 2-aminopyridine. The resulting derivs. were analyzed on a nanoflow electrospray ionization (ESI) quadrupole-inlet time-of-flight mass spectrometer using the low-energy collision-induced dissociation technique. In the MS/MS spectra, the oxonium (b or internal series) and y series ions, which are derived from the multiply charged precursor ions, were predominant and were used for the structural readout. Some oxonium ions that were observed in the low-mass region, but that were not found in the PSD analyses (Mo, W.; et al. Anal. Chemical 1998, 70, 4520-4526), rendered a more detailed structural insight. The oxonium ions at m/z 512.2, which are derived from the fucosylated oligosaccharides of Ig Y and thyroglobulin, were observed, suggesting that fucosylation had occurred proximal to the outer nonreducing terminus. In addition, the data herein show that structural elucidation can be routinely achieved at a low sample concentration For the case of ABDEAE derivs., this can be achieved at the 50 fmol/μL level and with the actual sample consumption at the atto-mole level using nanoflow ESI MS/MS.
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 18 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:784265 CAPLUS
DOCUMENT NUMBER: 130:120726
TITLE: Sulfatide from the pig jejunum brush border epithelial cell surface is involved in binding of Escherichia coli enterotoxin b
AUTHOR(S): Rousset, Elodie; Harel, Josee; Dubreuil, J. Daniel
CORPORATE SOURCE: Groupe de Recherche sur les Maladies Infectieuses du Porc, Departement de Pathologie et Microbiologie, Faculte de Medecine Veterinaire, Universite de Montreal, Saint-Hyacinthe, QC, J2S 7C6, Can.
SOURCE: Infection and Immunity (1998), 66(12), 5650-5658
CODEN: INFIBR; ISSN: 0019-9567
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Using a quant. dot blot overlay assay of polyvinylidene difluoride membranes, the authors investigated the ability of Escherichia coli heat-stable enterotoxin b (STb) to bind to various glycolipids of defined structure. STb bound strongly to acidic glycosphingolipids, including sulfatide (or 3'-sulfogalactosylceramide) and several gangliosides, but not significantly to their derivs., galactosylceramide and asialogangliosides, resp. STb exhibited the highest binding affinity for sulfatide. STb bound to pure sulfatide in a dose-dependent and saturable

manner, with a detection level of a few nanograms. The binding was not inhibited by tetramethylurea, which is a strong disrupter of hydrophobic interactions, or by the anionic sulfated polymer of glucose, dextran sulfate, indicating that the binding is not due solely to either hydrophobic or ionic interactions via the sulfate group of the sulfatide. The specificity of the binding was confirmed by the finding that a 500-fold molar excess of sulfatide inhibited STb binding by approx. 45%, whereas no competition was obtained with galactosylceramide under the same conditions. Taken together, the authors' data indicated that a galactose residue linked to a sulfate group is required for the binding specificity of STb. Then, total lipids extracted either from the mucous layer or from the epithelial cells of the pig jejunum brush border, the natural target of STb, were analyzed by thin-layer chromatog. (TLC). Both exts. contained a lipidic mol. with a relative mobility on a TLC plate similar to that of the sulfatide standard The migrated lipid extracted directly from a preparative TLC plate was confirmed to be sulfatide, as it was recognized by laminin, a sulfated glycolipid binding protein, and by a monoclonal antibody directed against sulfatide. In an overlay assay on PVDF membranes, STb bound to the sulfatide prepared from porcine jejunum as well as to the sulfatide standard Thus, these findings suggest that the terminal oligosaccharide sequence Gal(3SO4)β1- on sulfatide could mediate binding of STb to its target cells and, in support of a recent report, probably terminal sialic acid residue on another glycosphingolipid. Moreover, pretreatment in the ligated intestinal loop assay with laminin or sulfatase altered the biol. activity of STb. In summary, the authors present data indicating that sulfatide represents a functional receptor for the STb toxin.

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 19 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:485644 CAPLUS
TITLE: Measurements of cellulase kinetics and initial product formation.
AUTHOR(S): Johnston, David B.; Whitaker, John R.; Shoemaker, Sharon P.; Smith, Gary M.
CORPORATE SOURCE: Department Food Science and Technology, University California, Davis, CA, 95616, USA
SOURCE: Book of Abstracts, 214th ACS National Meeting, Las Vegas, NV, September 7-11 (1997), AGFD-007. American Chemical Society: Washington, D. C.
CODEN: 64RNAO
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB Cellulases are a group of enzymes that participate in the natural recycling of cellulose from plant material, and are potentially useful for the conversion of lignocellulosic waste material into glucose. Analyses of cellulase activity and kinetics are complicated due to substrate insoly. Furthermore, cellulose derivs. and soluble oligosaccharides are not representative substrates. Our research has resulted in the development of a reductometric method that is sensitive in the nanomolar range for determination of kinetic activity of purified cellulases on amorphous cellulose and aqueous insol. cellooligosaccharides. Preparation and separation of aqueous insol. cellooligosaccharides for use as substrates, and the adaptation of fluorescent labeling methods for separation and anal. of enzymic hydrolysis products were developed. Measurements of Km and Vmax for individual enzymes are compared using these methods.

L20 ANSWER 20 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:479492 CAPLUS
DOCUMENT NUMBER: 127:159237
TITLE: An important developmental role for oligosaccharides

during early embryogenesis of cyprinid fish
AUTHOR(S): Bakkers, Jeroen; Semino, Carlos E.; Stroband, Henri; Kijne, Jan W.; Robbins, Phillips W.; Spaink, Herman P.
CORPORATE SOURCE: Institute Molecular Plant Sciences, Leiden University, Leiden, 2333 AL, Neth.
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (1997), 94(15), 7982-7986
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Derivs. of chitin oligosaccharides have been shown to play a role in plant organogenesis at nanomolar concns. Here the authors present data which indicate that chitin oligosaccharides are important for embryogenesis in vertebrates. The authors characterize chitin oligosaccharides synthesized in vitro by zebrafish and carp embryos in the late gastrulation stage by incorporation of radiolabeled N-acetyl-D-[U14C]glucosamine and by HPLC in combination with enzymic conversion using the Bradyrhizobium NodZ α-1,6-fucosyltransferase and chitinases. A rapid and sensitive bioassay for chitin oligosaccharides was also used employing suspension-cultured plant cells of Catharanthus roseus. The authors show that chitin oligosaccharide synthase activity is apparent only during late gastrulation and can be inhibited by antiserum raised against the Xenopus DG42 protein. The DG42 protein, a glycosyltransferase, is transiently expressed between midblastula and neurulation in Xenopus and zebrafish embryogenesis. Microinjection of the DG42 antiserum or the Bradyrhizobium NodZ enzyme in fertilized eggs of zebrafish led to severe defects in trunk and tail development.

L20 ANSWER 21 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:158362 CAPLUS
TITLE: Measurements of cellulase kinetics and synergism using insoluble cellooligosaccharides.
AUTHOR(S): Johnston, David B.; Whitaker, John R.; Shoemaker, Sharon P.; Smith, Gary M.
CORPORATE SOURCE: Department Food Science and Technology, University California, Davis, CA, 95616, USA
SOURCE: Book of Abstracts, 213th ACS National Meeting, San Francisco, April 13-17 (1997), AGFD-029. American Chemical Society: Washington, D. C.
CODEN: 64AOAA
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB Cellulases are a group of enzymes that participate in the natural recycling of cellulose from plant material, and are potentially useful for the conversion of lignocellulosic waste material into glucose. Anal. of cellulase activity and kinetics are complicated due to substrate insoly. Furthermore, cellulose derivs. and soluble oligosaccharides are not representative substrates. Our research has resulted in the development of a reductometric method sensitive in the nanomolar range for determination of kinetic activity of purified cellulases on amorphous cellulose and aqueous insol. cellooligosaccharides. Preparation and separation of aqueous insol. celloligosaccharides for use as substrates, and the adaptation of fluorescent labeling methods for separation and anal. of enzymic hydrolysis products was done. Measurements of Km and Vmax for individual and mixts. of purified enzymes are compared.

L20 ANSWER 22 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:694095 CAPLUS
DOCUMENT NUMBER: 123:138688
TITLE: Oligosaccharide elicitors and elicitor receptors
AUTHOR(S): Hahn, Michael G.

CORPORATE SOURCE: Complex Carbohydrate Research Center, University Georgia, Athens, GA, 30602-4712, USA
SOURCE: Current Plant Science and Biotechnology in Agriculture (1995), 22(Current Issues in Plant Molecular and Cellular Biology), 37-58
CODEN: CPBAE2; ISSN: 0924-1949
PUBLISHER: Kluwer
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

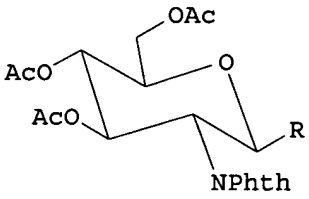
AB A review with 143 refs. Oligosaccharide elicitors capable of inducing one or more plant defense responses have been prepared from plant (homogalacturonan) and fungal (β-glucan, chitin, chitosan) cell wall polysaccharides, and fungal glycoproteins. The structures and activities of these elicitors are presented. In addition, recent biochem. investigations of the cellular signaling pathway(s) triggered by these signal mols. are reviewed. The latter will focus on the studies of the signaling pathway leading to the biosynthesis and accumulation of phytoalexins in soybean tissues. This pathway is triggered by nanomolar concns. of a branched hepta-β-glucoside elicitor originating from mycelial walls. Current research is focused on the first step in the signaling pathway, the recognition of the elicitor by a specific receptor. A radio-labeled deriv. of the elicitor has been prepared and used to demonstrate the presence of specific, high-affinity binding protein(s) (EBPs) (putative receptors) for the elicitor in soybean root plasma membranes. The EBPs are solubilized from the soybean root membranes using non-ionic detergents with retention of their high affinity and specificity for the hepta-β-glucoside elicitor. Purification of the EBPs using affinity chromatog. is in progress, and current results suggest that the EBPs exist as a multimeric protein complex. The EBPs recognize the same structural elements of the hepta-β-glucoside elicitor that are essential for its phytoalexin-inducing activity, suggesting that the EBPs are physiol. elicitor receptors.

L20 ANSWER 23 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:480970 CAPLUS
DOCUMENT NUMBER: 121:80970
TITLE: Lysine-glycosylated recombinant interleukin-2
INVENTOR(S): Linna, Timo J.; Sabesan, Subramaniam
PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co., USA
SOURCE: U.S., 17 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5312903	A	19940517	US 1990-531970	19900601
PRIORITY APPLN. INFO.:			US 1990-531970	19900601

AB The title protein, the carbohydrate moiety of which is added by chemical means, is claimed. The carbohydrate moiety may be a mono- or oligosaccharide. The glycosylation method comprises attachment of an ω-methoxycarbonylalkanol to the reducing end of the sugar followed by reaction with hydrazine. The sugar acyl hydrazide so produced can be coupled to the protein in aqueous solution in the presence of dioxane, NaNO2 or t-Bu nitrite and HCl, or in DMF. Many glycosylated IL-2 proteins were prepared in this fashion. These derivs. were more soluble in water than the nonglycosylated IL-2 and they retained their biol. activity. Several glycosylated IL-2 proteins lost most of their T lymphocyte-activating ability while retaining most or all of their ability to enhance natural killer cell and lymphokine-activated killer cell activity.

L20 ANSWER 24 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:631879 CAPLUS
DOCUMENT NUMBER: 113:231879
TITLE: Standardized intermediates for oligosaccharide synthesis: convenient preparation of 2-amino-2-deoxy-D-glucose derivatives and their conversion into the D-galactose analogs
AUTHOR(S): El-Sokkary, Ramadan I.; Silwanis, Basim Azmy; Nashed, Mina A.; Paulsen, Hans
CORPORATE SOURCE: Fac. Sci., Alexandria Univ., Alexandria, Egypt
SOURCE: Carbohydrate Research (1990), 203(2), 319-23
CODEN: CRBRAT; ISSN: 0008-6215
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 113:231879
GI



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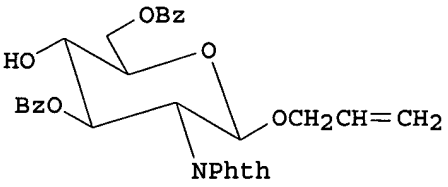

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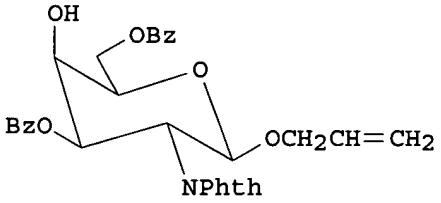


III

AB Treating tetraacetate I (R = Ac, NPhth = phthalimido) with allyl alc. in CH2Cl2 containing FeCl3 gave I (R = CH2:CHCH2O) which was deacetylated by NaOMe-MeOH followed by benzoylation with BzCl to give 95.8% phthalimido deriv. II. The latter was treated with (CF3SO2)2O in CH2Cl2 to give an intermediate 4-triflate which was converted by NaNO2-DMF to 86% galactopyranoside III, a useful glycosyl donor for oligosaccharide synthesis.

L20 ANSWER 25 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:521782 CAPLUS
DOCUMENT NUMBER: 109:121782
TITLE: Circular dichroism spectra of bichromophorically derivatized methyl-D-galactopyranosides, calculable by pairwise additivity, provide a basis for novel microanalysis of oligosaccharides
AUTHOR(S): Vazquez, Jesus T.; Wiesler, William T.; Nakanishi, Koji
CORPORATE SOURCE: Dep. Chem., Columbia Univ., New York, NY, 10027, USA
SOURCE: Carbohydrate Research (1988), 176(2), 175-94
CODEN: CRBRAT; ISSN: 0008-6215
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The spectroscopic basis for a novel alternative to methylation microanal. for linkage determination is presented. The complex CD spectra of "bichromophoric" D-galactopyranoside derivs., i.e., containing two

types of exciton-coupling chromophore, namely, p-bromobenzoate (λmax 245 nm) and p-methoxycinnamate (λmax 311 nm), are highly characteristic at nanomolar levels, indicative of the sugar, the substitution pattern, and the D- or L-configuration. That these spectra are due to a recently demonstrated pairwise additivity is confirmed. Work directed towards an oligosaccharide derivatization-sequence, resulting in the easily identifiable tetrachromophoric monosaccharide residues, is described. Such an anal. can simultaneously accomplish identification of sugar components, linkage pattern, and determination of absolute configuration at the nanomolar level.

L20 ANSWER 26 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:515878 CAPLUS
DOCUMENT NUMBER: 107:115878
TITLE: The exciton chirality method and its application to oligosaccharide structure determination
AUTHOR(S): Nakanishi, Koji; Park, Myung Hwan; Takeda, Reiji; Vazquez, Jesus T.; Wiesler, William T.
CORPORATE SOURCE: Dep. Chem., Columbia Univ., New York, NY, 10027, USA
SOURCE: Stereochem. Org. Bioorg. Transform., Proc. Workshop Conf. Hoechst, 17th (1987), Meeting Date 1986, 303-19. Editor(s): Bartmann, Wilhelm; Sharpless, K. Barry. VCH: Weinheim, Fed. Rep. Ger.
CODEN: 55QDAJ
DOCUMENT TYPE: Conference
LANGUAGE: English
AB The exciton chirality method is a powerful tool for determination of stereochem.
in organic mols., particularly those containing hydroxyl groups at stereocenters.
Extensions of this method to microscale oligosaccharide structure anal. involve various derivitization sequences with exciton chromophores. Benzoates have been used with protection/deprotection schemes, while benzylates offer stability to glycosidic cleavage conditions and the option of oxidation to the more sensitive benzoates. CD spectra of all such sugar derivs. studied have been succesfully calculated based upon a general additivity relation. Derivatization schemes provide constituent sugar units with chromophores at linkage points, at the hydroxyls not involved in glycoside linkages, or, in a third approach utilizing two different types of chromophores, at both positions. Derivs. obtained by this final approach provide for characteristic CD curves at nanomolar levels.

L20 ANSWER 27 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1960:103980 CAPLUS
DOCUMENT NUMBER: 54:103980
ORIGINAL REFERENCE NO.: 54:19834f-h
TITLE: Metabolism of sucrose by Leishmania donovani
AUTHOR(S): Chatterjee, A. N.; Ghosh, J. J.
CORPORATE SOURCE: Indian Inst. for Biochem. & Exptl. Med., Calcutta
SOURCE: Ann. Biochem. and Exptl. Med. (Calcutta) (1958), 18, 69-76
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB A crude cell-free extract of L. donovani, strain 81, prepared by grinding the organisms with sand in a mortar and centrifuging the suspension was examined for enzyme activity. The extract contd. 0.70-0.75 mg. N/ml. The enzyme activity was optimum at pH 7.1 in phosphate buffer and was directly proportional to enzyme concentration The activity was nearly doubled when the temperature was raised from 31 to 41°; however, inactivation was appreciable in 10 min. at 50°. The effect of substrate concentration on enzyme activity showed a Km value (Michaelis constant) of 5 + 10-3M, which indicated a fairly high affinity of the enzyme for its substrate. Paper chromatographic analysis revealed that the disappearance of the

substrate sucrose was accompanied by the simultaneous formation of free glucose and fructose. No oligosaccharide, polysaccharide, or phosphorylated sugar deriv. was formed. Enzyme activity was not inhibited by NaCN, NaF, Na3AsO4, NaNO3, or NaN3 at concns. of 10-3M.

L20 ANSWER 28 OF 37 MEDLINE on STN
ACCESSION NUMBER: 2005225021 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 15859615
TITLE: Derivatization using dimethylamine for tandem mass spectrometric structure analysis of enzymatically and acidically depolymerized methyl cellulose.
AUTHOR: Momcilovic Dane; Schagerlof Herje; Rome Daniel; Jornten-Karlsson Magnus; Karlsson Karl-Erik; Wittgren Bengt; Tjerneld Folke; Wahlund Karl-Gustav; Brinkmalm Gunnar
CORPORATE SOURCE: Department of Technical Analytical Chemistry, Lund University, P.O. Box 124, S-221 00 Lund, Sweden.
SOURCE: Analytical chemistry, (2005 May 1) Vol. 77, No. 9, pp. 2948-59.
Journal code: 0370536. ISSN: 0003-2700.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 30 Apr 2005
Last Updated on STN: 14 Dec 2005

AB Structure analysis of partially depolymerized methyl cellulose was performed by nanoelectrospray ionization tandem mass spectrometry (nano-ESI-MS/MS) and by matrix-assisted laser desorption/ionization tandem mass spectrometry (MALDI-MS/MS). Dimethylamine (DMA) was used for the first time as a reducing end derivatization reagent for oligosaccharides. This is an attractive reagent since it could be easily removed from the reaction mixture. Most important it also introduces a basic functional group that increased the sensitivity in both MALDI and nano-ESI. Depolymerization was made in two ways: one by the cellulose selective endoglucanase 5A from Bacillus agaradhaerens (Ba Cel5A) and the other by trifluoroacetic acid. The DMA derivatives formed both protonated and sodiated molecules in nano-ESI and MALDI. Tandem MS of protonated molecules yielded predominantly Y fragments from which the distribution of the substituents in the oligomers could be measured. Fragments obtained in tandem MS of sodiated molecules provided information regarding the positions of the substituents within the anhydroglucose units (AGUs). It was found that Ba Cel5A could cleave glucosidic bonds also if the AGU on the reducing side of the bond was fully methylated. The combination of DMA derivatization and tandem MS was demonstrated as a tool for the characterization of endoglucanase selectivity.

L20 ANSWER 29 OF 37 MEDLINE on STN
ACCESSION NUMBER: 2004519358 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15384134
TITLE: Structural analysis of permethylated oligosaccharides using electrospray ionization quadrupole time-of-flight tandem mass spectrometry and deutero-reduction.
AUTHOR: Morelle Willy; Faid Valegh; Michalski Jean-Claude
CORPORATE SOURCE: Unite Mixte de Recherche CNRS/USTL 8576, Glycobiologie Structurale et Fonctionnelle, IFR 118, Universite des Sciences et Technologies de Lille 1, 59655 Villeneuve d'Ascq Cedex, France.. willy.morelle@univ-lillel.fr
SOURCE: Rapid communications in mass spectrometry : RCM, (2004) Vol. 18, No. 20, pp. 2451-64.
Journal code: 8802365. ISSN: 0951-4198.
PUB. COUNTRY: England: United Kingdom

DOCUMENT TYPE: (EVALUATION STUDIES)
Journal; Article; (JOURNAL ARTICLE)
(VALIDATION STUDIES)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200411
ENTRY DATE: Entered STN: 19 Oct 2004
Last Updated on STN: 19 Dec 2004
Entered Medline: 30 Nov 2004

AB Deutero-reduced permethylated oligosaccharides were analyzed by electrospray ionization mass spectrometry (ESI-MS) and tandem mass spectrometry (MS/MS) using a hybrid quadrupole orthogonal acceleration time-of-flight mass spectrometer, fitted with a nanoflow ESI source. Under these ionization conditions such derivatives preferentially form sodiated molecular species in addition to protonated molecular species. Under collision-induced dissociation, protonated and sodiated molecular species yield simple and predictable fragment mass spectra. A systematic study was conducted on a series of deutero-reduced permethylated glycans to allow rationalization of the fragmentation processes. MS/MS spectra were characterized by fragments resulting from the cleavage of glycosidic bonds. These fragments originating from both the reducing and the non-reducing ends of the glycan yield information on sequence and branching. Furthermore, the substituent 3-linked to a HexNAc unit was readily eliminated. Special attention was devoted to a systematic study of fucosylated glycans. The fucosylated deutero-reduced permethylated glycans were submitted to an acidic hydrolysis, releasing specifically the fucosyl residues. The nascent free hydroxyl groups were subsequently CD3-labelled in order to determine the positions initially bearing the fucosyl residues along the oligosaccharide backbone. This methodology was finally applied to characterize a glycan pool enzymatically released from glycoproteins. The present data show that structural elucidation can be achieved at the 50 fmol level.

L20 ANSWER 30 OF 37 MEDLINE on STN
ACCESSION NUMBER: 2004370673 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15273998
TITLE: Sequencing of oligosaccharides derivatized with benzylamine using electrospray ionization-quadrupole time of flight-tandem mass spectrometry.
AUTHOR: Morelle Willy; Michalski Jean-Claude
CORPORATE SOURCE: Unite Mixte de Recherche CNRS/USTL 8576, Glycobiologie Structurale et Fonctionnelle, Universite des Sciences et Technologies de Lille 1, Villeneuve d'Ascq, France.. willy.morelle@univ-lille1.fr
SOURCE: Electrophoresis, (2004 Jul) Vol. 25, No. 14, pp. 2144-55.
Journal code: 8204476. ISSN: 0173-0835.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200501
ENTRY DATE: Entered STN: 28 Jul 2004
Last Updated on STN: 27 Jan 2005
Entered Medline: 26 Jan 2005

AB Oligosaccharides were derivatized by reductive amination using benzylamine and analyzed by nanoelectrospray ionization-quadrupole time of flight-tandem mass spectrometry (nanoESI-QTOF-MS/MS) in the positive ion mode. The major signals were obtained under these conditions from the [M+H]+ ions for all benzylamine-derivatized oligosaccharides. To obtain structural information from these derivatized oligosaccharides, MS/MS was applied. Protonated molecular ions underwent extensive fragmentation, even under low-energy collision-induced dissociation. MS/MS spectra of

[M+H]+ ions are characterized by simple fragmentation patterns which result from cleavage of the glycosidic bonds and thus allow a straightforward interpretation. Fragmentation of the [M+H]+ ions gave predominantly B- and Y-type glycosidic fragments. A systematic study of various oligosaccharides showed that information on sugar sequence and branching could easily be obtained. Predictable and reproducible fragmentation patterns could be obtained in all cases. This derivatization procedure and mass spectrometric methodology were applied successfully to neutral and acidic glycans released from 10 microg of glycoproteins separated by gel electrophoresis. Moreover, the derivatives retain their sensitivity to exoglycosidases. Thus a series of sequential on-target exoglycosidase treatments combined with matrix-assisted laser desorption/ionization-time of flight-mass spectrometry (MALDI-TOF-MS) was found to be useful for the determination of structural features of the glycans released from proteins separated by gel electrophoresis such as the monosaccharide sequence, branching pattern, and anomeric configurations of the corresponding glycosidic linkages. Our strategy can be used successfully to assign the major glycans released from proteins separated by gel electrophoresis.

L20 ANSWER 31 OF 37 MEDLINE on STN
ACCESSION NUMBER: 2003447632 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14507180
TITLE: Synthesis of oligosaccharides on soluble high-molecular-weight branched polymers in combination with purification by nanofiltration.
AUTHOR: Majumdar Debatosh; Zhu Tong; Boons Geert-Jan
CORPORATE SOURCE: Complex Carbohydrate Research Center, The University of Georgia, 220 Riverbend Road, Athens, Georgia, 30602-4712, USA.
CONTRACT NUMBER: CA088986 (NCI)
P41-RR-5351 (NCRR)
SOURCE: Organic letters, (2003 Oct 2) Vol. 5, No. 20, pp. 3591-4. Journal code: 100890393. ISSN: 1523-7060.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200403
ENTRY DATE: Entered STN: 26 Sep 2003
Last Updated on STN: 12 Mar 2004
Entered Medline: 11 Mar 2004
AB [structure: see text] An efficient approach for polymer-supported oligosaccharide synthesis is described whereby branched and high-molecular-weight PEG derivatives are used in combination with purification by nanofiltration. This methodology was applied to the preparation of a tetraglucoside and the tumor-associated antigen Le(x).

L20 ANSWER 32 OF 37 MEDLINE on STN
ACCESSION NUMBER: 2003032291 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12517177
TITLE: Macrocyclic glycoclusters. Self-aggregation and phosphate-induced agglutination behaviors of calix[4]resorcarene-based quadruple-chain amphiphiles with a huge oligosaccharide pool.
AUTHOR: Hayashida Osamu; Mizuki Keiji; Akagi Kazuyuki; Matsuo Aki; Kanamori Takuya; Nakai Takashi; Sando Shinsuke; Aoyama Yasuhiro
CORPORATE SOURCE: Department of Synthetic Chemistry and Biological Chemistry, Graduate School of Engineering, Kyoto University, Yoshida, Sakyo-ku, Japan.
SOURCE: Journal of the American Chemical Society, (2003 Jan 15) Vol. 125, No. 2, pp. 594-601.

Journal code: 7503056. ISSN: 0002-7863.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200303
ENTRY DATE: Entered STN: 24 Jan 2003
Last Updated on STN: 16 Mar 2003
Entered Medline: 14 Mar 2003

AB Macrocyclic glycocluster compounds 2n (n = 2-7) with four alkyl (undecyl) chains and eight oligosaccharide moieties on the opposite sides of the calix[4]resorcarene macrocycle are prepared from the reactions of the corresponding octaamine derivative with maltooligosaccharide lactones. Combined evidence from dynamic light scattering (DLS), gel permeation chromatography (GPC), and transmission electron microscopy (TEM) indicates that they form small micelle-like nanoparticles (d congruent with 3 nm) in water. In the presence of Na2HPO4/NaH2PO4, nanoparticles are agglutinated with phosphate ions as a glue to grow in size up to 60-100 nm, as revealed by DLS as well as microscopy (TEM and AFM). The phosphate-induced agglutination processes can be followed by surface plasmon resonance (SPR). Amphiphile 2n is readily immobilized on the hydrophobized sensor chip of SPR to give a closely packed monolayer with oligosaccharide moieties exposed to bulk water. While there is no further adsorption of 2n on the resulting monolayer, this does occur when the latter is pretreated with the phosphate salts, ultimately giving rise to a multilayer upon repeated treatment of the chip with 2n and Na2HPO4/NaH2PO4 in an alternate manner. Kinetic analyses show that the phosphate-mediated inter(saccharide) interactions in terms of rate and affinity are markedly dependent on the oligosaccharide chain lengths (n), becoming more favorable with increasing n's. The novel aggregation and agglutination behaviors observed are discussed in terms of immobilizable and irreversible micelles on the basis of the cone-shaped structure of quadruple-chain amphiphile 2n having a huge saccharide pool and the efficiency of multiple hydrogen bonding therein. The unique intermolecular binding properties of compound 22 and analogues so far reported are reviewed in light of the present finding.

L20 ANSWER 33 OF 37 MEDLINE on STN
ACCESSION NUMBER: 2002098973 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11829127
TITLE: Vehicles for oligonucleotide delivery to tumours.
AUTHOR: Dass Crispin R
CORPORATE SOURCE: Johnson & Johnson Research, Strawberry Hills, Australia.. cdass@medau.jnj.com
SOURCE: The Journal of pharmacy and pharmacology, (2002 Jan) Vol. 54, No. 1, pp. 3-27. Ref: 303
Journal code: 0376363. ISSN: 0022-3573.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200207
ENTRY DATE: Entered STN: 7 Feb 2002
Last Updated on STN: 18 Jul 2002
Entered Medline: 17 Jul 2002

AB The vasculature of a tumour provides the most effective route by which neoplastic cells may be reached and eradicated by drugs. The fact that a tumour's vasculature is relatively more permeable than healthy host tissue should enable selective delivery of drugs to tumour tissue. Such delivery is relevant to carrier-mediated delivery of genetic medicine to tumours. This review discusses the potential of delivering therapeutic oligonucleotides (ONs) to tumours using cationic liposomes and

cyclodextrins (CyDs), and the major hindrances posed by the tumour itself on such delivery. Cationic liposomes are generally 100-200 nm in diameter, whereas CyDs typically span 1.5 nm across. Cationic liposomes have been used for the introduction of nucleic acids into mammalian cells for more than a decade. CyD molecules are routinely used as agents that engender cholesterol efflux from lipid-laden cells, thus having an efficacious potential in the management of atherosclerosis. A recent trend is to employ these oligosaccharide molecules for delivering nucleic acids in cells both in-vitro and in-vivo. Comparisons are made with other ON delivery agents, such as porphyrin derivatives (< 1 nm), branched chain dendrimers (approximately 10 nm), polyethylenimine polymers (approximately 10 nm), nanoparticles (20-1,000 nm) and microspheres (> 1 microm), in the context of delivery to solid tumours. A discourse on how the chemical and physical properties of these carriers may affect the uptake of ONs into cells, particularly in-vivo, forms a major basis of this review.

L20 ANSWER 34 OF 37 MEDLINE on STN
ACCESSION NUMBER: 1999430280 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10500493
TITLE: Structural characterization of chemically derivatized oligosaccharides by nanoflow electrospray ionization mass spectrometry.
AUTHOR: Mo W; Sakamoto H; Nishikawa A; Kagi N; Langridge J I; Shimonishi Y; Takao T
CORPORATE SOURCE: Institute for Protein Research, Osaka University, Japan.
SOURCE: Analytical chemistry, (1999 Sep 15) Vol. 71, No. 18, pp. 4100-6.
Journal code: 0370536. ISSN: 0003-2700.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199911
ENTRY DATE: Entered STN: 11 Jan 2000
Last Updated on STN: 11 Jan 2000
Entered Medline: 2 Nov 1999

AB Oligosaccharides released from several glycoproteins were derivatized with either 4-aminobenzoic acid 2-(diethylamino)ethyl ester (ABDEAE) (Yoshino, K.; et al. Anal. Chemical 1995, 67, 4028-4031) or 2-aminopyridine. The resulting derivatives were analyzed on a nanoflow electrospray ionization (ESI) quadrupole-inlet time-of-flight mass spectrometer using the low-energy collision-induced dissociation technique. In the MS/MS spectra, the oxonium (b or internal series) and y series ions, which are derived from the multiply charged precursor ions, were predominant and were used for the structural readout. Some oxonium ions that were observed in the low-mass region, but that were not found in the PSD analyses (Mo, W.; et al. Anal. Chemical 1998, 70, 4520-4526), rendered a more detailed structural insight. The oxonium ions at m/z 512.2, which are derived from the fucosylated oligosaccharides of immunoglobulin Y and thyroglobulin, were observed, suggesting that fucosylation had occurred proximal to the outer nonreducing terminus. In addition, the data herein show that structural elucidation can be routinely achieved at a low sample concentration. For the case of ABDEAE derivatives, this can be achieved at the 50 fmol/microL level and with the actual sample consumption at the attomole level using nanoflow ESI MS/MS.

L20 ANSWER 35 OF 37 MEDLINE on STN
ACCESSION NUMBER: 1999043888 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9826338
TITLE: Sulfatide from the pig jejunum brush border epithelial cell surface is involved in binding of Escherichia coli enterotoxin b.

AUTHOR: Rousset E; Harel J; Dubreuil J D
CORPORATE SOURCE: Groupe de Recherche sur les Maladies Infectieuses du Porc, Departement de Pathologie et Microbiologie, Faculte de Medecine Veterinaire, Universite de Montreal, Saint-Hyacinthe, Quebec, Canada J2S 7C6.
SOURCE: Infection and immunity, (1998 Dec) Vol. 66, No. 12, pp. 5650-8.
Journal code: 0246127. ISSN: 0019-9567.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199812
ENTRY DATE: Entered STN: 15 Jan 1999
Last Updated on STN: 15 Jan 1999
Entered Medline: 24 Dec 1998

AB Using a quantitative dot blot overlay assay of polyvinylidene difluoride membranes, we investigated the ability of Escherichia coli heat-stable enterotoxin b (STb) to bind to various glycolipids of defined structure. STb bound strongly to acidic glycosphingolipids, including sulfatide (or 3'-sulfogalactosylceramide) and several gangliosides, but not significantly to their derivatives, galactosylceramide and asialogangliosides, respectively. STb exhibited the highest binding affinity for sulfatide. STb bound to pure sulfatide in a dose-dependent and saturable manner, with a detection level of a few nanograms. The binding was not inhibited by tetramethylurea, which is a strong disrupter of hydrophobic interactions, or by the anionic sulfated polymer of glucose, dextran sulfate, indicating that the binding is not due solely to either hydrophobic or ionic interactions via the sulfate group of the sulfatide. The specificity of the binding was confirmed by the finding that a 500-fold molar excess of sulfatide inhibited STb binding by approximately 45%, whereas no competition was obtained with galactosylceramide under the same conditions. Taken together, our data indicated that a galactose residue linked to a sulfate group is required for the binding specificity of STb. Then, total lipids extracted either from the mucous layer or from the epithelial cells of the pig jejunum brush border, the natural target of STb, were analyzed by thin-layer chromatography (TLC). Both extracts contained a lipidic molecule with a relative mobility on a TLC plate similar to that of the sulfatide standard. The migrated lipid extracted directly from a preparative TLC plate was confirmed to be sulfatide, as it was recognized by laminin, a sulfated glycolipid binding protein, and by a monoclonal antibody directed against sulfatide. In an overlay assay on PVDF membranes, STb bound to the sulfatide prepared from porcine jejunum as well as to the sulfatide standard. Thus, these findings suggest that the terminal oligosaccharide sequence Gal(3SO4)beta1- on sulfatide could mediate binding of STb to its target cells and, in support of a recent report (E. Rousset, J. Harel, and J. D. Dubreuil, Microb. Pathog. 24:277-288, 1998), probably terminal sialic acid residue on another glycosphingolipid. Moreover, pretreatment in the ligated intestinal loop assay with laminin or sulfatase altered the biological activity of STb. In summary, we present data indicating that sulfatide represents a functional receptor for the STb toxin.

L20 ANSWER 36 OF 37 MEDLINE on STN
ACCESSION NUMBER: 97368304 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9223299
TITLE: An important developmental role for oligosaccharides during early embryogenesis of cyprinid fish.
AUTHOR: Bakkers J; Semino C E; Stroband H; Kijne J W; Robbins P W; Spaink H P
CORPORATE SOURCE: Institute of Molecular Plant Sciences, Leiden University, Wassenaarseweg 64, 2333 AL Leiden, The Netherlands.
CONTRACT NUMBER: CA14051 (NCI)

GM31318 (NIGMS)
SOURCE: Proceedings of the National Academy of Sciences of the United States of America, (1997 Jul 22) Vol. 94, No. 15, pp. 7982-6.
Journal code: 7505876. ISSN: 0027-8424.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199708
ENTRY DATE: Entered STN: 8 Sep 1997
Last Updated on STN: 8 Sep 1997
Entered Medline: 27 Aug 1997

AB Derivatives of chitin oligosaccharides have been shown to play a role in plant organogenesis at nanomolar concentrations. Here we present data which indicate that chitin oligosaccharides are important for embryogenesis in vertebrates. We characterize chitin oligosaccharides synthesized in vitro by zebrafish and carp embryos in the late gastrulation stage by incorporation of radiolabeled N-acetyl-D-[U14C]glucosamine and by HPLC in combination with enzymatic conversion using the Bradyrhizobium NodZ alpha-1, 6-fucosyltransferase and chitinases. A rapid and sensitive bioassay for chitin oligosaccharides was also used employing suspension-cultured plant cells of Catharanthus roseus. We show that chitin oligosaccharide synthase activity is apparent only during late gastrulation and can be inhibited by antiserum raised against the Xenopus DG42 protein. The DG42 protein, a glycosyltransferase, is transiently expressed between midblastula and neurulation in Xenopus and zebrafish embryogenesis. Microinjection of the DG42 antiserum or the Bradyrhizobium NodZ enzyme in fertilized eggs of zebrafish led to severe defects in trunk and tail development.

L20 ANSWER 37 OF 37 MEDLINE on STN
ACCESSION NUMBER: 88327748 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3416317
TITLE: Circular dichroism spectra of bichromophorically derivatized methyl-D-galactopyranosides, calculable by pairwise additivity, provide a basis for novel microanalysis of oligosaccharides.
AUTHOR: Vazquez J T; Wiesler W T; Nakanishi K
CORPORATE SOURCE: Department of Chemistry, Columbia University, New York, NY 10027.
CONTRACT NUMBER: AI 10187 (NIAID)
SOURCE: Carbohydrate research, (1988 May 15) Vol. 176, No. 2, pp. 175-94.
Journal code: 0043535. ISSN: 0008-6215.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198810
ENTRY DATE: Entered STN: 8 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 18 Oct 1988

AB The spectroscopic basis for a novel alternative to methylation microanalysis for linkage determination is presented. The complex c.d. spectra of "bichromophoric" D-galactopyranoside derivatives, i.e., containing two types of exciton-coupling chromophore, namely, p-bromobenzoate (lambda max 245 nm) and p-methoxycinnamate (lambda max 311 nm), are highly characteristic at nanomolar levels, indicative of the sugar, the substitution pattern, and the D or L configuration. That these spectra are due to a recently demonstrated pairwise additivity is confirmed. Work directed towards an oligosaccharide derivatization-sequence, resulting in the easily identifiable

tetrachromophoric monosaccharide residues, is described. Such an analysis can simultaneously accomplish identification of sugar components, linkage pattern, and determination of absolute configuration at the nanomolar level.

L21 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:230605 CAPLUS
DOCUMENT NUMBER: 141:29185
TITLE: Molecule-up fabrication and manipulation of lipid nanotubes
AUTHOR(S): Shimizu, Toshimi; John, George; Fukagawa, Akihiro; Ito, Kohzo; Frusawa, Hiroshi
CORPORATE SOURCE: Nanoarchitectonics Research Center (NARC) National Institute of Advanced Industrial Science and Technology (AIST), CREST, Japan Science and Technology Corporation (JST), Tsukuba, 305-8565, Japan
SOURCE: International Journal of Nanoscience (2002), 1(5 & 6), 465-469
CODEN: IJNNAJ; ISSN: 0219-581X
PUBLISHER: World Scientific Publishing Co. Pte. Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Self-assembling behavior of both a cardanol-appended glycolipid mixture and the fractionated 4 components was examined in aqueous solns. The cardanyl glucoside mixture differing in the degree of unsatn. in the hydrophobic chain was found to self-assemble in H2O to form open-ended nanotube structures with 10-15 nm inner diams. The pure saturated homolog produced twisted helical ribbons through self-assembly, whereas the monoene derivative gave tubular structures. The rational control of helical and tubular morphologies was achieved by a combinatorial approach through the binary self-assembly of the saturated and monoene derivs. The flexural rigidity of a single lipid nanotube was 1st evaluated using optical tweezers manipulation and then compared with that of natural microtubules.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:372544 CAPLUS
DOCUMENT NUMBER: 145:57933
TITLE: Elastic precursor of the transformation from glycolipid nanotube to vesicle
AUTHOR(S): Fujima, T.; Frusawa, H.; Minamikawa, H.; Ito, K.; Shimizu, T.
CORPORATE SOURCE: Graduate School of Frontier Sciences, University of Tokyo, 5-1-5 Kashiwa-no-Ha, Kashiwa, 277-8561, Japan
SOURCE: Journal of Physics: Condensed Matter (2006), 18(11), 3089-3096
CODEN: JCOMEL; ISSN: 0953-8984
PUBLISHER: Institute of Physics Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Using a combination of manipulation with optical tweezers and digital video microscopy, the flexural rigidity of single glycolipid 'nano' tubes has been measured below the transition temperature at which the lipid tubules are transformed into vesicles. Consequently, we have found a clear reduction in the rigidity before the transition as temperature is increasing. Further expts. using IR spectroscopy (FT-IR) and differential scanning calorimetry (DSC) have suggested a microscopic change of the tube walls, synchronizing with the precursory softening of the nanotubes.
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:230605 CAPLUS
DOCUMENT NUMBER: 141:29185
TITLE: Molecule-up fabrication and manipulation of lipid nanotubes
AUTHOR(S): Shimizu, Toshimi; John, George; Fukagawa, Akihiro; Ito, Kohzo; Frusawa, Hiroshi
CORPORATE SOURCE: Nanoarchitectonics Research Center (NARC) National Institute of Advanced Industrial Science and Technology (AIST), CREST, Japan Science and Technology Corporation (JST), Tsukuba, 305-8565, Japan
SOURCE: International Journal of Nanoscience (2002), 1(5 & 6), 465-469
CODEN: IJNNAJ; ISSN: 0219-581X
PUBLISHER: World Scientific Publishing Co. Pte. Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Self-assembling behavior of both a cardanol-appended glycolipid mixture and the fractionated 4 components was examined in aqueous solns. The cardanyl glucoside mixture differing in the degree of unsatn. in the hydrophobic chain was found to self-assemble in H2O to form open-ended nanotube structures with 10-15 nm inner diams. The pure saturated homolog produced twisted helical ribbons through self-assembly, whereas the monoene derivative gave tubular structures. The rational control of helical and tubular morphologies was achieved by a combinatorial approach through the binary self-assembly of the saturated and monoene derivs. The flexural rigidity of a single lipid nanotube was 1st evaluated using optical tweezers manipulation and then compared with that of natural microtubules.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:400616 CAPLUS
DOCUMENT NUMBER: 135:166620
TITLE: Nanotube formation from renewable resources via coiled nanofibers
AUTHOR(S): John, George; Masuda, Mitsutoshi; Okada, Yuji; Yase,

Kiyoshi; Shimizu, Toshimi
CORPORATE SOURCE: National Institute of Materials and Chemical Research, Tsukuba, 305-8565, Japan
SOURCE: Advanced Materials (Weinheim, Germany) (2001), 13(10), 715-718
CODEN: ADVMEW; ISSN: 0935-9648
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 135:166620

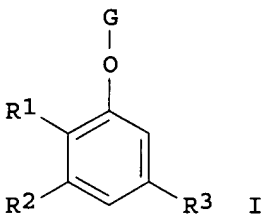
AB Glycosylation of cardanol with penta-O-acetyl-β-D-glucopyranose followed by deprotection afforded a glycolipid mixture that self-assembled into nanofibers in water and acted as gelation agents. The helical morphol. of the fibers could be controlled by altering the degree of side-chain unsatn. Coiled nanofibers self-assembled into nanotubes that exhibited a phase-transition at 46° to vesicles.

REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:501807 CAPLUS
DOCUMENT NUMBER: 133:139919
TITLE: Skin cosmetics containing cardol glycosides or cardanol glycosides
INVENTOR(S): Ikemoto, Takeshi; Nakatsugawa, Hiroko; Yamazaki, Shunsuke
PATENT ASSIGNEE(S): Kanebo, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000204030	A2	20000725	JP 1999-3909	19990111

PRIORITY APPLN. INFO.: JP 1999-3909 19990111
OTHER SOURCE(S): MARPAT 133:139919
GI



I

AB Skin cosmetics contain cardol glycosides I [R1 = H, Me; R2 = OH; R3 = C15 linear (un)saturated hydrocarbyl; G = mono- or oligosaccharide residue] or cardanol glycosides I (R1, R3, G = same as above; R2 = OH). The cosmetics impart smoothness to the skin without causing skin irritation. A cream was formulated containing 3-hydroxy-5-(8,11,14-pentadecatrienyl)phenyl D-glucoside.

L21 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:414833 CAPLUS

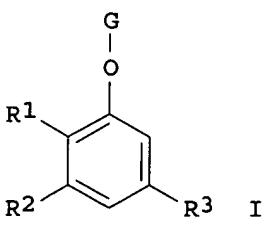
DOCUMENT NUMBER: 127:122278
TITLE: Cardanol-glycols and cardanol-glycol-based polyurethane films
AUTHOR(S): Ton That, Minh Tan
CORPORATE SOURCE: Polymer Res. Center, HoChiMinh City Univ. of Technology, HoChiMinh City, Vietnam
SOURCE: Journal of Applied Polymer Science (1997), 65(3), 507-510
CODEN: JAPNAB; ISSN: 0021-8995
PUBLISHER: Wiley
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The syntheses of cardanol-glycols (CGs) and CG-based polyurethane (CGPU) films have been investigated. CGs and CGPU films were characterized by IR, 1H-NMR spectra as well as a swelling test and DSC studies. The increase of mol. weight of glycols led to a decrease of cardanol content in CGPUs and hence decreased crosslinking d. of the films, which strongly affects the swelling property and glass transition temperature The autoxidn.-polymerization of CGPUs through the double bonds of the cardanol side chain catalyzed by cobalt salt was discussed.

L26 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:864930 CAPLUS
TITLE: Development of "artificial urushi" as environmentally benign coating by enzymatic and related catalysis
AUTHOR(S): Kobayashi, Shiro
CORPORATE SOURCE: R & D Center for Bio-based Materials, Kyoto Institute of Technology, Kyoto, 606-8585, Japan
SOURCE: Abstracts of Papers, 232nd ACS National Meeting, San Francisco, CA, United States, Sept. 10-14, 2006 (2006) , POLY-362. American Chemical Society: Washington, D. C.
CODEN: 69IHRD
DOCUMENT TYPE: Conference; Meeting Abstract; (computer optical disk)
LANGUAGE: English
AB We have been studying enzymic polymerization for these two dacades to synthesize various polymers like phenolic polymers, polysaccharides and functional polyesters. A natural coating of Urushi is a Japanese lacquer having tradition for more than one thousand years. It is an enzymically crosslinked material of urushiols, phenol derivs., from urushi trees. Since Urushi is extremely expensive, it is nowadays used for only limited cases. Therefore, we intended to apply our experiences to develop commodity urushi materials by enzymic and related polymns. of cashew nuts shell liqs., a cheap bio-based material, whose main component is cardanol, a phenol derivative We mimicked the chemical of natural production of Urushi in oxidatively polymerizing cardanol. Cardanol has close structure to that of urushiols, therefore, the polymerized and crosslinked cardanol is artificial urushi, which in fact shows close properties to natural Urushi. Thus, we have developed artificial urushi as an environmentally benign coating material.

L26 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:501807 CAPLUS
DOCUMENT NUMBER: 133:139919
TITLE: Skin cosmetics containing cardol glycosides or cardanol glycosides
INVENTOR(S): Ikemoto, Takeshi; Nakatsugawa, Hiroko; Yamazaki, Shunsuke
PATENT ASSIGNEE(S): Kanebo, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000204030	A2	20000725	JP 1999-3909	19990111

PRIORITY APPLN. INFO.: JP 1999-3909 19990111
OTHER SOURCE(S): MARPAT 133:139919
GI



I

AB Skin cosmetics contain cardol glycosides I [R1 = H, Me; R2 = OH; R3 = C15 linear (un)saturated hydrocarbyl; G = mono- or oligosaccharide residue] or cardanol glycosides I (R1, R3, G = same as above; R2 = OH). The cosmetics impart smoothness to the skin without causing skin irritation. A cream was formulated containing 3-hydroxy-5-(8,11,14-pentadecatrienyl)phenyl D-glucoside.

L31 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:471672 CAPLUS
DOCUMENT NUMBER: 145:125867
TITLE: New Renewable Resource Amphiphilic Molecular Design for Size-Controlled and Highly Ordered Polyaniline Nanofibers
AUTHOR(S): Anilkumar, P.; Jayakannan, M.
CORPORATE SOURCE: Polymer Research Group, Chemical Sciences Division, Regional Research Laboratory, Thiruvananthapuram, 695019, India
SOURCE: Langmuir (2006), 22(13), 5952-5957
CODEN: LANGD5; ISSN: 0743-7463
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We demonstrate here, for the first time, a unique strategy for conducting polyaniline nanofibers based on renewable resources. Naturally available cardanol, which is an industrial waste and main pollutant from the cashew nut industry, is utilized for producing well-defined polyaniline nanofibers. A new amphiphilic mol. is designed and developed from cardanol, which forms a stable emulsion with aniline for a wide composition range in water (1:1 to 1:100 dopant/aniline mole ratio) to produce polyaniline nanofibers. The SEM and transmission electron microscopy anal. of the nanofibers reveals that the dopant/aniline ratio plays a major role in determining the shape and size of polyaniline nanofibers. The nanofiber length increases with the increase in the dopant/aniline ratio, and perfectly linear, well-defined nanofibers of lengths as long as 7-8 μM were produced. The amphiphilic dopant has a built-in head-to-tail geometry and effectively penetrates into the polyaniline chains to form highly organized nanofibers. Wide-angle X-ray diffraction (WXRD) spectra of the nanofibers showed a new peak at 2θ = 6.3 (d spacing = 13.9 Å) corresponding to the three-dimensional solid-state ordering of polyaniline-dopant chains, and this peak intensity increases with increase in the nanofiber length. The comparison of morphol. and WXRD reveals that high ordering in polyaniline chains results in the formation of long, well-defined nanofibers, and this direct correlation for the polyaniline nanofibers with solid-state ordering has been established. The conductivity of the polyaniline nanofibers also increases with increase in the solid-state ordering rather than increasing with the extent of doping. The polyaniline nanofibers are freely soluble in water and possess high environmental and thermal stability up to 300 °C for various applications.
REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:222223 CAPLUS
TITLE: Nanotubes from renewable resources: A new paradigm
AUTHOR(S): John, George; Shimizu, Toshimi
CORPORATE SOURCE: CREST , Japan Science and Technology Corporation (JST), National Institute of Advanced Industrial Science and Technology, Troy, NY, 12180, USA
SOURCE: Abstracts of Papers, 227th ACS National Meeting, Anaheim, CA, United States, March 28-April 1, 2004 (2004), CELL-177. American Chemical Society: Washington, D. C.
CODEN: 69FGKM
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB The building blocks currently used in supramol. chemical are synthesized mainly from petroleum-based starting materials. However, bio-based organic

synthesis presents distinct advantages for the generation of new building blocks since they are obtainable from renewable resources. This study is an effort to combine the philosophies of green chemical and supramol. chemical, making use of renewable plant-derived resources as the starting materials (an alternate feedstock) for the noncovalent synthesis of meso- and nanoscale structures. The use of cardanol (obtained from Anacardium occidentale L, a renewable resource and byproduct of cashew industry) and its derivs. for various applications is well known. However its use in the synthesis of aryl glycolipids and their self-assembled nanostructures are new to the literature. The glycolipids are self-assembled to form a variety of well-defined nanostructures including liquid crystalline phases (thermotropic&lyotropic), vesicles, nanofibers , low-mol. weight gelators and nanotubes under suitable conditions, which could be of use in material applications. These results will lead to efficient mol. design of supramol. nanostructures and nanomaterials based on green chems., otherwise under-utilized.

L31 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:400616 CAPLUS
DOCUMENT NUMBER: 135:166620
TITLE: Nanotube formation from renewable resources via coiled nanofibers
AUTHOR(S): John, George; Masuda, Mitsutoshi; Okada, Yuji; Yase, Kiyoshi; Shimizu, Toshimi
CORPORATE SOURCE: National Institute of Materials and Chemical Research, Tsukuba, 305-8565, Japan
SOURCE: Advanced Materials (Weinheim, Germany) (2001), 13(10), 715-718
CODEN: ADVMEW; ISSN: 0935-9648
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 135:166620
AB Glycosylation of cardanol with penta-O-acetyl-β-D-glucopyranose followed by deprotection afforded a glycolipid mixture that self-assembled into nanofibers in water and acted as gelation agents. The helical morphol. of the fibers could be controlled by altering the degree of side-chain unsatn. Coiled nanofibers self-assembled into nanotubes that exhibited a phase-transition at 46° to vesicles.
REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

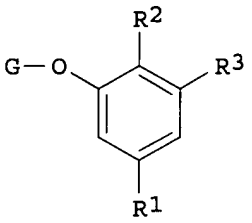
L31 ANSWER 4 OF 4 MEDLINE on STN
ACCESSION NUMBER: 2006356113 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 16768535
TITLE: New renewable resource amphiphilic molecular design for size-controlled and highly ordered polyaniline nanofibers.
AUTHOR: Anilkumar P; Jayakannan M
CORPORATE SOURCE: Polymer Research Group, Chemical Sciences Division, Regional Research Laboratory, Thiruvananthapuram-695019, India.
SOURCE: Langmuir : the ACS journal of surfaces and colloids, (2006 Jun 20) Vol. 22, No. 13, pp. 5952-7.
Journal code: 9882736. ISSN: 0743-7463.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 14 Jun 2006
Last Updated on STN: 30 Jun 2006
AB We demonstrate here, for the first time, a unique strategy for conducting polyaniline nanofibers based on renewable resources. Naturally available cardanol, which is an industrial waste and main

pollutant from the cashew nut industry, is utilized for producing well-defined polyaniline nanofibers. A new amphiphilic molecule is designed and developed from cardanol, which forms a stable emulsion with aniline for a wide composition range in water (1:1 to 1:100 dopant/aniline mole ratio) to produce polyaniline nanofibers. The scanning electron microscopy and transmission electron microscopy analysis of the nanofibers reveals that the dopant/aniline ratio plays a major role in determining the shape and size of polyaniline nanofibers. The nanofiber length increases with the increase in the dopant/aniline ratio, and perfectly linear, well-defined nanofibers of lengths as long as 7-8 muM were produced. The amphiphilic dopant has a built-in head-to-tail geometry and effectively penetrates into the polyaniline chains to form highly organized nanofibers. Wide-angle X-ray diffraction (WXRD) spectra of the nanofibers showed a new peak at 2theta = 6.3 (d spacing = 13.9 A) corresponding to the three-dimensional solid-state ordering of polyaniline-dopant chains, and this peak intensity increases with increase in the nanofiber length. The comparison of morphology and WXRD reveals that high ordering in polyaniline chains results in the formation of long, well-defined nanofibers, and this direct correlation for the polyaniline nanofibers with solid-state ordering has been established. The conductivity of the polyaniline nanofibers also increases with increase in the solid-state ordering rather than increasing with the extent of doping. The polyaniline nanofibers are freely soluble in water and possess high environmental and thermal stability up to 300 degrees C for various applications.

L33 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:704743 CAPLUS
DOCUMENT NUMBER: 135:273162
TITLE: Preparation of O-glycoside type glycolipids and method for their preparation
INVENTOR(S): George, John; Masuda, Mitsutoshi; Shimizu, Toshimi
PATENT ASSIGNEE(S): Ministry of Economy, Trade and Industry; National Industrial Research Institute, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001261693	A2	20010926	JP 2000-70879	20000314

PRIORITY APPLN. INFO.: JP 2000-70879 20000314
OTHER SOURCE(S): CASREACT 135:273162; MARPAT 135:273162
GI



I

AB Ph glycosides (I; G = sugar residue of aldose; R1 = H, OH; R2 = H, CO2H; R3 = aliphatic (un)saturated straight-chain hydrocarbon group) are prepared by reaction of long-chain hydrocarbon group-substituted phenols I (G = H; R1 -R3 = same as above) with an aldose derivative which is fully protected and has a reactive, functionalized derivative of the reducing terminal hydroxy group. Preferably phenols are those obtained by extraction of cashew nut shells. These glycolipids are easily prepared in a large scale using readily available natural products and are useful as functional materials since they form organic thin films, closed vesicles, or fibrous aggregates when dispersed in water or aqueous alc., and thermotropic liquid crystals when used as a dry powder (no data). Thus, cashew nut oil was vacuum-distilled twice at .apprx.400 Pa, collecting the component having b.p. 220-235° to give cardanol. Cardanol (1.52 g) was dissolved in 10 mL CH2Cl2, followed by adding 3.9 g β-D-glucose pentaacetate and 0.62 mL Et2O.BF3 in the presence of 2 g mol. sieves and the resulting mixture was stirred at room temperature for 24 h to give 75% 1-O-(2,3,4,6-tetra-O-acetyl-β-D-glucopyranosyl) cardanol which (1.26 g) was stirred with a 1:4 volume mixture of 45 weight% aqueous Et3N and methanol at room temperature for 24 h to give 95% 1-O-(β-D-glucopyranosyl) cardanol.

L33 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:703448 CAPLUS
DOCUMENT NUMBER: 135:257424
TITLE: Preparation of molecular aggregates of O-glycosides
INVENTOR(S): George, John; Masuda, Mitsutoshi; Shimizu, Toshimi
PATENT ASSIGNEE(S): Ministry of Economy, Trade and Industry; National Industrial Research Institute, Japan; National

Institute of Advanced Industrial Science and Technology
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001261692	A2	20010926	JP 2000-70880	20000314
JP 3533440	B2	20040531		

PRIORITY APPLN. INFO.: JP 2000-70880 20000314

AB Fibrous mol. aggregates of O-glycosides having an aldose residue and OC6H4R-3 [R = C12-18 (un)saturated linear aliphatic hydrocarbyl] as an aglycon are prepared by dissolving the glycosides in H2O with higher temperature to the concentration of saturated solution and slowly cooling the solution to induce mol. association Spherical mol. aggregates of the glycosides are prepared by heating the above solution after cooling. Liquid-crystalline aggregates of the glycosides are prepared by heating glycosides in the absence of solvents. The mol. aggregates are useful as liposome materials, electronic devices, emulsifiers, stabilizers, dispersants, wetting agents, etc. 1-(O-β-D-Glucopyranoside tetraacetate) cardanol (preparation given) was dissolved in H2O under boiling, and the solution was cooled at 0.2°/min and let stand for 2 days. Fibrous materials thus obtained were aggregates of coiled fibers.

L35 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:697123 CAPLUS
DOCUMENT NUMBER: 139:230947
TITLE: Fibrous nano self-assemblies
INVENTOR(S): Shimizu, Toshimi; John, George
PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan; National Institute of Advanced Industrial Science and Technology
SOURCE: PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003072858	A1	20030904	WO 2002-JP6923	20020708
W: US				
RW: DE, FR, GB				
JP 2003252893	A2	20030910	JP 2002-49239	20020226
EP 1479799	A1	20041124	EP 2002-743861	20020708
R: DE, FR, GB				
US 2005014937	A1	20050120	US 2004-497090	20040528

PRIORITY APPLN. INFO.: JP 2002-49239 A 20020226
WO 2002-JP6923 W 20020708
OTHER SOURCE(S): MARPAT 139:230947

AB Fibrous nano self-assemblies contain O-glycoside glycolipids each having a structure of GOC6H4R (G = glycosyl; R = C12-18 hydrocarbyl). The O-glycoside glycolipids comprise an O-glycoside glycolipid mixture containing ≥2 O-glycoside glycolipids having different structures and in which the content of the major two O-glycoside glycolipids amts. to ≥80% in the O-glycoside glycolipids, or O-glycoside glycolipids having a single structure.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L35 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:372544 CAPLUS
DOCUMENT NUMBER: 145:57933
TITLE: Elastic precursor of the transformation from glycolipid nanotube to vesicle
AUTHOR(S): Fujima, T.; Frusawa, H.; Minamikawa, H.; Ito, K.; Shimizu, T.
CORPORATE SOURCE: Graduate School of Frontier Sciences, University of Tokyo, 5-1-5 Kashiwa-no-Ha, Kashiwa, 277-8561, Japan
SOURCE: Journal of Physics: Condensed Matter (2006), 18(11), 3089-3096
CODEN: JCOMEL; ISSN: 0953-8984
PUBLISHER: Institute of Physics Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Using a combination of manipulation with optical tweezers and digital video microscopy, the flexural rigidity of single glycolipid 'nano' tubes has been measured below the transition temperature at which the lipid tubules are transformed into vesicles. Consequently, we have found a clear reduction in the rigidity before the transition as temperature is increasing. Further expts. using IR spectroscopy (FT-IR) and differential scanning calorimetry (DSC) have suggested a microscopic change of the tube walls, synchronizing with the precursory softening of the nanotubes.
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L35 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:230605 CAPLUS
DOCUMENT NUMBER: 141:29185
TITLE: Molecule-up fabrication and manipulation of lipid nanotubes
AUTHOR(S): Shimizu, Toshimi; John, George; Fukagawa, Akihiro; Ito, Kohzo; Frusawa, Hiroshi
CORPORATE SOURCE: Nanoarchitectonics Research Center (NARC) National Institute of Advanced Industrial Science and Technology (AIST), CREST, Japan Science and Technology Corporation (JST), Tsukuba, 305-8565, Japan
SOURCE: International Journal of Nanoscience (2002), 1(5 & 6), 465-469
CODEN: IJNNAJ; ISSN: 0219-581X
PUBLISHER: World Scientific Publishing Co. Pte. Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Self-assembling behavior of both a cardanol-appended glycolipid mixture and the fractionated 4 components was examined in aqueous solns. The cardanyl glucoside mixture differing in the degree of unsatn. in the hydrophobic chain was found to self-assemble in H2O to form open-ended nanotube structures with 10-15 nm inner diams. The pure saturated homolog produced twisted helical ribbons through self-assembly, whereas the monoene derivative gave tubular structures. The rational control of helical and tubular morphologies was achieved by a combinatorial approach through the binary self-assembly of the saturated and monoene derivs. The flexural rigidity of a single lipid nanotube was 1st evaluated using optical tweezers manipulation and then compared with that of natural microtubules.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L35 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:222223 CAPLUS
TITLE: Nanotubes from renewable resources: A new paradigm
AUTHOR(S): John, George; Shimizu, Toshimi
CORPORATE SOURCE: CREST , Japan Science and Technology Corporation

(JST), National Institute of Advanced Industrial Science and Technology, Troy, NY, 12180, USA

SOURCE: Abstracts of Papers, 227th ACS National Meeting, Anaheim, CA, United States, March 28-April 1, 2004 (2004), CELL-177. American Chemical Society: Washington, D. C.
CODEN: 69FGKM

DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

AB The building blocks currently used in supramol. chemical are synthesized mainly from petroleum-based starting materials. However, bio-based organic synthesis presents distinct advantages for the generation of new building blocks since they are obtainable from renewable resources. This study is an effort to combine the philosophies of green chemical and supramol. chemical, making use of renewable plant-derived resources as the starting materials (an alternate feedstock) for the noncovalent synthesis of meso- and nanoscale structures. The use of cardanol (obtained from Anacardium occidentale L, a renewable resource and byproduct of cashew industry) and its derivs. for various applications is well known. However its use in the synthesis of aryl glycolipids and their self-assembled nanostructures are new to the literature. The glycolipids are self-assembled to form a variety of well-defined nanostructures including liquid crystalline phases (thermotropic&lyotropic), vesicles, nanofibers, low-mol. weight gelators and nanotubes under suitable conditions, which could be of use in material applications. These results will lead to efficient mol. design of supramol. nanostructures and nanomaterials based on green chems., otherwise under-utilized.

L35 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:789359 CAPLUS
DOCUMENT NUMBER: 140:410713
TITLE: Molecular nanotube
AUTHOR(S): Shimizu, Toshimi
CORPORATE SOURCE: Research hCenter for Surface Nanoarchitectronics, National Institute of Advanced Industrial Science and Technology, Tsukuba-shi, Ibaragi, 305-8565, Japan
SOURCE: Kogyo Zairyo (2003), 51(9), 54-57
CODEN: KZAIA5; ISSN: 0452-2834
PUBLISHER: Nikkan Kogyo Shinbunsha
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review on author's own work on preparation of nanotubes by using synthetic glycolipid having hydrophobic cardanol end group and hydrophilic glucose end group. Preparation of silica nanotubes are also discussed.

L35 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:697123 CAPLUS
DOCUMENT NUMBER: 139:230947
TITLE: Fibrous nano self-assemblies
INVENTOR(S): Shimizu, Toshimi; John, George
PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan; National Institute of Advanced Industrial Science and Technology
SOURCE: PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003072858	A1	20030904	WO 2002-JP6923	20020708

W: US
RW: DE, FR, GB

JP 2003252893	A2	20030910	JP 2002-49239		20020226
EP 1479799	A1	20041124	EP 2002-743861		20020708
R: DE, FR, GB					
US 2005014937	A1	20050120	US 2004-497090		20040528
PRIORITY APPLN. INFO.:			JP 2002-49239	A	20020226
			WO 2002-JP6923	W	20020708

OTHER SOURCE(S): MARPAT 139:230947

AB Fibrous nano self-assemblies contain O-glycoside glycolipids each having a structure of GOC6H4R (G = glycosyl; R = C12-18 hydrocarbyl). The O-glycoside glycolipids comprise an O-glycoside glycolipid mixture containing ≥2 O-glycoside glycolipids having different structures and in which the content of the major two O-glycoside glycolipids amts. to ≥80% in the O-glycoside glycolipids, or O-glycoside glycolipids having a single structure.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L35 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:685792 CAPLUS
DOCUMENT NUMBER: 139:214656
TITLE: Preparation of nano- or micro-scale self assemblies
INVENTOR(S): Kamiya, Masako; Usawa, Hirotaka; Shimizu, Toshimi; George, John
PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan; National Institute of Advanced Industrial Science and Technology
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
JP 2003245900	A2	20030902	JP 2002-49238		20020226
WO 2003072489	A1	20030904	WO 2003-JP2108		20030226
W: US					
RW: DE, FR, GB					
EP 1498386	A1	20050119	EP 2003-743031		20030226
R: DE, FR, GB					
US 2004259812	A1	20041223	US 2004-501124		20040707
JP 2006143723	A2	20060608	JP 2005-331525		20051116
PRIORITY APPLN. INFO.:			JP 2002-49238	A	20020226
			WO 2003-JP2108	W	20030226

OTHER SOURCE(S): MARPAT 139:214656

AB Title assemblies comprise GOC6H4R (G = residue of oligosaccharide made of C2-30 monosaccharides; R = C6-25 hydrocarbyl). Thus, cardanyl 2,3,4,6,2',3',6'-hepta-O-acetyl-β-D-lactoside was deprotected to give cardanyl β-D-lactoside, which was refluxed in water for 4 h and left for several days at room temperature to form self-assembled branched nanofiber with diameter .apprx.800 nm.

L35 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:646637 CAPLUS
DOCUMENT NUMBER: 139:164940
TITLE: Surface-modified glycolipid nanotubes and their preparation
INVENTOR(S): Minoura, Norihiko; Ogiso, Masayo; Shimizu, Toshimi; George, Jon
PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan; National Institute of Advanced Industrial Science and

Technology
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003231100	A2	20030819	JP 2002-35035	20020213
PRIORITY APPLN. INFO.:			JP 2002-35035	20020213

OTHER SOURCE(S): MARPAT 139:164940

AB Nanotubes of m-GOC6H4R (G = glycosyl; R = C12-18 hydrocarbyl), showing inner diameter 10-35 nm and outer diameter 35-80 nm, are surface modified with compds. having hydrophilic groups and C5-30 hydrocarbon group containing (a) alkyl or alkylene group, whose C number is ≥1/4 of that of the hydrocarbon group, and (b) optional 1-3 vinyl groups. An aqueous solution containing cardanyl glucoside nanotube (preparation given) and Na dodecylbenzenesulfonate was allowed to stand at room temperature to give a neg. charged nanotube.

L35 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:183836 CAPLUS
DOCUMENT NUMBER: 136:233460
TITLE: Hollow fibrous glycolipid nanotube and method for producing the same
INVENTOR(S): Shimizu, Toshimi; John, Geroge; Masuda, Mitsutoshi
PATENT ASSIGNEE(S): National Institute of Advanced Industrial Science and Technology, Japan
SOURCE: Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1186688	A1	20020313	EP 2001-307413	20010831
EP 1186688	B1	20050615		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002080489	A2	20020319	JP 2000-271192	20000907
JP 3598367	B2	20041208		
US 2002051881	A1	20020502	US 2001-939841	20010828
US 6632497	B2	20031014		
PRIORITY APPLN. INFO.:			JP 2000-271192 A	20000907

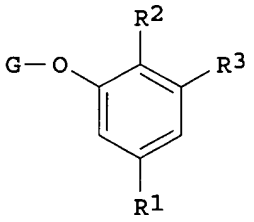
AB A novel hollow fibrous organic nanotube can be produced by a simple procedure from a readily available and inexpensive natural material, which is regenerable and has a wide range of application. The hollow fibrous organic nanotube having an inner pore diameter of 10 to 20 nm and an outer diameter of 40 to 80 nm comprises an O-glycoside type glycolipid having an aldose residue as the glycosyl group and a group represented by m-OC6H4R, wherein R is an unsatd. straight-chain hydrocarbon group having 12 to 18 carbon atoms, as the aglycon. The nanotube structure can be obtained by gradually cooling a saturated aqueous solution of the starting material to room temperature and the solution is kept standing for days or for weeks to cause spontaneous formation of hollow tubes as ppts. A nanotube was prepared from 1-(O-P-D-Glucopyranoside) cardanol.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L35 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:704743 CAPLUS
DOCUMENT NUMBER: 135:273162
TITLE: Preparation of O-glycoside type glycolipids and method for their preparation
INVENTOR(S): George, John; Masuda, Mitsutoshi; Shimizu, Toshimi
PATENT ASSIGNEE(S): Ministry of Economy, Trade and Industry; National Industrial Research Institute, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001261693	A2	20010926	JP 2000-70879	20000314

PRIORITY APPLN. INFO.: JP 2000-70879 20000314
OTHER SOURCE(S): CASREACT 135:273162; MARPAT 135:273162
GI



I

AB Ph glycosides (I; G = sugar residue of aldose; R1 = H, OH; R2 = H, CO2H; R3 = aliphatic (un)saturated straight-chain hydrocarbon group) are prepared by reaction of long-chain hydrocarbon group-substituted phenols I (G = H; R1 -R3 = same as above) with an aldose derivative which is fully protected and has a reactive, functionalized derivative of the reducing terminal hydroxy group. Preferably phenols are those obtained by extraction of cashew nut shells. These glycolipids are easily prepared in a large scale using readily available natural products and are useful as functional materials since they form organic thin films, closed vesicles, or fibrous aggregates when dispersed in water or aqueous alc., and thermotropic liquid crystals when used as a dry powder (no data). Thus, cashew nut oil was vacuum-distilled twice at .apprx.400 Pa, collecting the component having b.p. 220-235° to give cardanol. Cardanol (1.52 g) was dissolved in 10 mL CH2Cl2, followed by adding 3.9 g β-D-glucose pentaacetate and 0.62 mL Et2O.BF3 in the presence of 2 g mol. sieves and the resulting mixture was stirred at room temperature for 24 h to give 75% 1-O-(2,3,4,6-tetra-O-acetyl-β-D-glucopyranosyl) cardanol which (1.26 g) was stirred with a 1:4 volume mixture of 45 weight% aqueous Et3N and methanol at room temperature for 24 h to give 95% 1-O-(β-D-glucopyranosyl) cardanol.

L35 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:400616 CAPLUS
DOCUMENT NUMBER: 135:166620
TITLE: Nanotube formation from renewable resources via coiled nanofibers
AUTHOR(S): John, George; Masuda, Mitsutoshi; Okada, Yuji; Yase, Kiyoshi; Shimizu, Toshimi
CORPORATE SOURCE: National Institute of Materials and Chemical Research,

Tsukuba, 305-8565, Japan
SOURCE: Advanced Materials (Weinheim, Germany) (2001), 13(10), 715-718
CODEN: ADVMEW; ISSN: 0935-9648
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 135:166620
AB Glycosylation of cardanol with penta-O-acetyl-β-D-glucopyranose followed by deprotection afforded a glycolipid mixture that self-assembled into nanofibers in water and acted as gelation agents. The helical morphol. of the fibers could be controlled by altering the degree of side-chain unsatn. Coiled nanofibers self-assembled into nanotubes that exhibited a phase-transition at 46° to vesicles.
REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

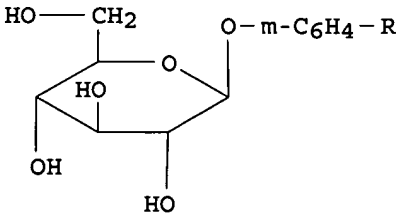
L37 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:719639 CAPLUS
DOCUMENT NUMBER: 139:229343
TITLE: Modification of nanochip and nanofiber of glycolipids
INVENTOR(S): Uzawa, Hirotaka; Zeng, Xiaoxiong; Shimizu, Toshimi; John, George; Minoura, Norihiko
PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan; National Institute of Advanced Industrial Science and Technology
SOURCE: PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003074720	A1	20030912	WO 2003-JP2298	20030228
W: US				
RW: DE, FR, GB				
JP 2003259893	A2	20030916	JP 2002-61797	20020307
EP 1512750	A1	20050309	EP 2003-708474	20030228
R: DE, FR, GB				

PRIORITY APPLN. INFO.: JP 2002-61797 A 20020307
WO 2003-JP2298 W 20030228

AB The nanochip and nanofiber of O-glycoside type glycolipids are modified with glycosyl transferase and/or glycosidase selected from galactosyl transferase, sialyl transferase, fucosyl transferase, α-galactosidase, β-galactosidase, sialidase, α-glucosidase, and β-glucosidase. Preparation of cardanyl β-D-glucopyranoside nanofiber and introduction of galactose into nanofiber with β-1,4-galactosyl transferase in the presence of galactose donor UDP-α-D-galactopyranoside 2Na salt were shown. the.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:961016 CAPLUS
DOCUMENT NUMBER: 138:321443
TITLE: Morphological control of helical solid bilayers in high-axial-ratio nanostructures through binary self-assembly
AUTHOR(S): John, George; Jung, Jong Hwa; Minamikawa, Hiroyuki; Yoshida, Kaname; Shimizu, Toshimi
CORPORATE SOURCE: CREST, Japan Science and Technology Corporation (JST) NARC, AIST, Tsukuba, 305-8562, Japan
SOURCE: Chemistry--A European Journal (2002), 8(23), 5494-5500
CODEN: CEUJED; ISSN: 0947-6539
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB Mixed mol. species of cardanyl glucoside (I; R = (CH2)14CH3, (CH2)7CH:CH(CH2)5CH3, (CH2)7(CH:CHCH2)2CH2CH3, (CH2)7(CH:CHCH2)2CH:CH2) derived from renewable resources provide nanotubes upon self-assembly in water, while the saturated homolog generated a twisted fibrous morphol. The cardanyl glucoside mixture was fractionated into four individual components in order to study their contribution to the nanotube formation. The rational control of self-assembled helical morphologies was achieved by binary self-assembling of the saturated and monoene derivs. This method can generate a diversity of self-assembled high-axial-ratio nanostructures (HARNs), ranging from twisted ribbons and helical ribbons to nanotubes.

REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 1 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:895597 CAPLUS
TITLE: Self-assembled lipid nanotube hosts: the dimension control for encapsulation of nanometer-scale guest substances
AUTHOR(S): Shimizu, Toshimi
CORPORATE SOURCE: Nanoarchitectonics Research Center (NARC), National Institute of Advanced Industrial Science and Technology (AIST), 1-1-1 Higashi, Tsukuba, Ibaraki, 305-8565, Japan
SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (2006), 44(17), 5137-5152
CODEN: JPACEC; ISSN: 0887-624X
PUBLISHER: John Wiley & Sons, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Supramol. nanotube hosts with precisely controlled inner or outer diams. have been synthesized by self-assembly of unsym. bolaamphiphilic monomers or glucopyranosylamide lipids, resp. Time-resolved fluorescent measurement using 8-anilinonaphthalene-1-sulfonate (ANS) as a probe revealed that the water confined in a cardanyl-β-D-glucopyranoside lipid nanotube has relatively lower solvent polarity corresponding to that of propanol than bulk water. Extensively developed hydrogen bond networks also characterize the confined water in comparison to the case in bulk water. Encapsulation ability of the glucopyranosylamide lipid nanotube has been examined by filling the lyophilized LNTs with gold or silver nanoparticles, ferritin, or magnetic crystals. Filling the unsym. bolaamphiphile nanotube possessing pos. charged inner surfaces with neg. charged polymer beads or ferritin proved to be successful without depending on capillary action.
REFERENCE COUNT: 107 THERE ARE 107 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:372544 CAPLUS
DOCUMENT NUMBER: 145:57933
TITLE: Elastic precursor of the transformation from glycolipid nanotube to vesicle
AUTHOR(S): Fujima, T.; Frusawa, H.; Minamikawa, H.; Ito, K.; Shimizu, T.
CORPORATE SOURCE: Graduate School of Frontier Sciences, University of Tokyo, 5-1-5 Kashiwa-no-Ha, Kashiwa, 277-8561, Japan
SOURCE: Journal of Physics: Condensed Matter (2006), 18(11), 3089-3096
CODEN: JCOMEL; ISSN: 0953-8984
PUBLISHER: Institute of Physics Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Using a combination of manipulation with optical tweezers and digital video microscopy, the flexural rigidity of single glycolipid 'nano' tubes has been measured below the transition temperature at which the lipid tubules are transformed into vesicles. Consequently, we have found a clear reduction in the rigidity before the transition as temperature is increasing. Further expts. using IR spectroscopy (FT-IR) and differential scanning calorimetry (DSC) have suggested a microscopic change of the tube walls, synchronizing with the precursory softening of the nanotubes.
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:1070530 CAPLUS

DOCUMENT NUMBER: 142:226354
TITLE: Local Environment and Property of Water inside the Hollow Cylinder of a Lipid Nanotube
AUTHOR(S): Yui, Hiroharu; Guo, Yanli; Koyama, Kana; Sawada, Tsuguo; John, George; Yang, Bo; Masuda, Mitsutoshi; Shimizu, Toshimi
CORPORATE SOURCE: CREST, Japan Science and Technology Agency, Nanoarchitectonics Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, 305-8562, Japan
SOURCE: Langmuir (2005), 21(2), 721-727
CODEN: LANGD5; ISSN: 0743-7463
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We investigated the local environment of water confined inside the hollow cylinder of lipid nanotubes (LNTs) by time-resolved fluorescent measurements and attenuated-total-reflectance IR (ATR-IR) spectroscopy. The LNT was obtained by self-assembly of cardanyl glucosides in water at room temperature and had an open-ended cylindrical nanospace with a diameter of 10-15 nm, a length of 10-100 μm, and hydrophilic inner and outer surfaces. We introduced a fluorescent probe of 8-anilinonaphthalene-1-sulfonate into the confined water and observed an extremely slow dynamic Stokes shift with a correlation time of 1.26 ns, which was 2-3 orders of magnitude longer than that of bulk-phase water. From the peak shift of the fluorescent spectrum, the local solvent polarity (ET(30)) of the confined water was estimated as 50 kcal/mol, which is 20% lower than that in bulk water. ATR-IR measurements showed that the hydrogen-bond network of water inside the LNT was more developed than that in bulk water at room temperature, which is in contrast to the water in other self-assembled confined geometries, such as Aerosol-OT (AOT) reversed micelles.
REFERENCE COUNT: 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:230605 CAPLUS
DOCUMENT NUMBER: 141:29185
TITLE: Molecule-up fabrication and manipulation of lipid nanotubes
AUTHOR(S): Shimizu, Toshimi; John, George; Fukagawa, Akihiro; Ito, Kohzo; Frusawa, Hiroshi
CORPORATE SOURCE: Nanoarchitectonics Research Center (NARC) National Institute of Advanced Industrial Science and Technology (AIST), CREST, Japan Science and Technology Corporation (JST), Tsukuba, 305-8565, Japan
SOURCE: International Journal of Nanoscience (2002), 1(5 & 6), 465-469
CODEN: IJNNAJ; ISSN: 0219-581X
PUBLISHER: World Scientific Publishing Co. Pte. Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Self-assembling behavior of both a cardanol-appended glycolipid mixture and the fractionated 4 components was examined in aqueous solns. The cardanyl glucoside mixture differing in the degree of unsatn. in the hydrophobic chain was found to self-assemble in H2O to form open-ended nanotube structures with 10-15 nm inner diams. The pure saturated homolog produced twisted helical ribbons through self-assembly, whereas the monoene derivative gave tubular structures. The rational control of helical and tubular morphologies was achieved by a combinatorial approach through the binary self-assembly of the saturated and monoene derivs. The flexural rigidity of a single lipid nanotube was 1st evaluated using optical tweezers manipulation and then compared with that of natural microtubules.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 5 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:719639 CAPLUS
DOCUMENT NUMBER: 139:229343
TITLE: Modification of nanochip and nanofiber of glycolipids
INVENTOR(S): Uzawa, Hirotaka; Zeng, Xiaoxiong; Shimizu, Toshimi; John, George; Minoura, Norihiko
PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan; National Institute of Advanced Industrial Science and Technology
SOURCE: PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003074720	A1	20030912	WO 2003-JP2298	20030228
W: US				
RW: DE, FR, GB				
JP 2003259893	A2	20030916	JP 2002-61797	20020307
EP 1512750	A1	20050309	EP 2003-708474	20030228
R: DE, FR, GB				

PRIORITY APPLN. INFO.: JP 2002-61797 A 20020307
WO 2003-JP2298 W 20030228

AB The nanochip and nanofiber of O-glycoside type glycolipids are modified with glycosyl transferase and/or glycosidase selected from galactosyl transferase, sialyl transferase, fucosyl transferase, α-galactosidase, β-galactosidase, sialidase, α-glucosidase, and β-glucosidase. Preparation of cardanyl β-D-glucopyranoside nanofiber and introduction of galactose into nanofiber with β-1,4-galactosyl transferase in the presence of galactose donor UDP-α-D-galactopyranoside 2Na salt were shown. the.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:685792 CAPLUS
DOCUMENT NUMBER: 139:214656
TITLE: Preparation of nano- or micro-scale self assemblies
INVENTOR(S): Kamiya, Masako; Usawa, Hirotaka; Shimizu, Toshimi; George, John
PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan; National Institute of Advanced Industrial Science and Technology
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003245900	A2	20030902	JP 2002-49238	20020226
WO 2003072489	A1	20030904	WO 2003-JP2108	20030226
W: US				
RW: DE, FR, GB				
EP 1498386	A1	20050119	EP 2003-743031	20030226

R: DE, FR, GB

US 2004259812	A1	20041223	US 2004-501124		20040707
JP 2006143723	A2	20060608	JP 2005-331525		20051116
PRIORITY APPLN. INFO.:			JP 2002-49238	A	20020226
			WO 2003-JP2108	W	20030226

OTHER SOURCE(S): MARPAT 139:214656

AB Title assemblies comprise GOC6H4R (G = residue of oligosaccharide made of C2-30 monosaccharides; R = C6-25 hydrocarbyl). Thus, cardanyl 2,3,4,6,2',3',6'-hepta-O-acetyl-β-D-lactoside was deprotected to give cardanyl β-D-lactoside, which was refluxed in water for 4 h and left for several days at room temperature to form self-assembled branched nanofiber with diameter .apprx.800 nm.

L38 ANSWER 7 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:646637 CAPLUS
DOCUMENT NUMBER: 139:164940
TITLE: Surface-modified glycolipid nanotubes and their preparation
INVENTOR(S): Minoura, Norihiko; Ogiso, Masayo; Shimizu, Toshimi; George, Jon
PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan; National Institute of Advanced Industrial Science and Technology
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003231100	A2	20030819	JP 2002-35035	20020213
PRIORITY APPLN. INFO.:			JP 2002-35035	20020213

OTHER SOURCE(S): MARPAT 139:164940

AB Nanotubes of m-GOC6H4R (G = glycosyl; R = C12-18 hydrocarbyl), showing inner diameter 10-35 nm and outer diameter 35-80 nm, are surface modified with compds. having hydrophilic groups and C5-30 hydrocarbon group containing (a) alkyl or alkylene group, whose C number is ≥1/4 of that of the hydrocarbon group, and (b) optional 1-3 vinyl groups. An aqueous solution containing cardanyl glucoside nanotube (preparation given) and Na dodecylbenzenesulfonate was allowed to stand at room temperature to give a neg. charged nanotube.

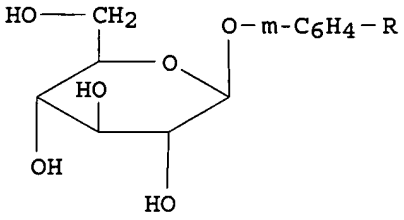
L38 ANSWER 8 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:451961 CAPLUS
DOCUMENT NUMBER: 139:36735
TITLE: Preparation of nanotubes of surface-active glycosides
INVENTOR(S): Minoura, Norihiko; Ogiso, Masayo; Shimizu, Toshimi; George, John
PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan; National Institute of Advanced Industrial Science and Technology; Japan Science and Technology Agency
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003166129	A2	20030613	JP 2001-363762	20011129
JP 3573205	B2	20041006		

PRIORITY APPLN. INFO.: JP 2001-363762 20011129
OTHER SOURCE(S): MARPAT 139:36735
AB The nanotubes, showing inner diameter 10-35 nm and outer diameter 35-80 nm, are prepared by dissolving m-GOC6H4R (G = glycosyl; R = C12-18 hydrocarbyl) into H2O, heating to 40-180°, cooling at ≤5.0°/min, and storing at temperature between freezing temperature of the solns. and 30° for ≥1 day. Cardanol was glycosylated by β-D-glucose pentaacetate and deacetylated to give cardanol 1-O-β-D-glucopyranoside, which was made into a nanotube with outer diameter .apprx.42 nm, inner diameter .apprx.20 nm, and length ≥25 μm.

L38 ANSWER 9 OF 11 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:961016 CAPLUS
DOCUMENT NUMBER: 138:321443
TITLE: Morphological control of helical solid bilayers in high-axial-ratio nanostructures through binary self-assembly
AUTHOR(S): John, George; Jung, Jong Hwa; Minamikawa, Hiroyuki; Yoshida, Kaname; Shimizu, Toshimi
CORPORATE SOURCE: CREST, Japan Science and Technology Corporation (JST) NARC, AIST, Tsukuba, 305-8562, Japan
SOURCE: Chemistry--A European Journal (2002), 8(23), 5494-5500 CODEN: CEUJED; ISSN: 0947-6539
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB Mixed mol. species of cardanyl glucoside (I; R = (CH2)14CH3, (CH2)7CH:CH(CH2)5CH3, (CH2)7(CH:CHCH2)2CH2CH3, (CH2)7(CH:CHCH2)2CH:CH2) derived from renewable resources provide nanotubes upon self-assembly in water, while the saturated homolog generated a twisted fibrous morphol. The cardanyl glucoside mixture was fractionated into four individual components in order to study their contribution to the nanotube formation. The rational control of self-assembled helical morphologies was achieved by binary self-assembling of the saturated and monoene derivs. This method can generate a diversity of self-assembled high-axial-ratio nanostructures (HARNs), ranging from twisted ribbons and helical ribbons to nanotubes.
REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 10 OF 11 MEDLINE on STN
ACCESSION NUMBER: 2005059949 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15641846
TITLE: Local environment and property of water inside the hollow cylinder of a lipid nanotube.
AUTHOR: Yui Hiroharu; Guo Yanli; Koyama Kana; Sawada Tsuguo; John George; Yang Bo; Masuda Mitsutoshi; Shimizu Toshimi
CORPORATE SOURCE: CREST, Japan Science and Technology Agency, Nanoarchitectonics Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba Central

4, 1-1-1 Higashi, Tsukuba, Ibaraki 305-8562, Japan.. hiroharu-yui@aist.go.jp
SOURCE: Langmuir : the ACS journal of surfaces and colloids, (2005 Jan 18) Vol. 21, No. 2, pp. 721-7.
Journal code: 9882736. ISSN: 0743-7463.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200607
ENTRY DATE: Entered STN: 4 Feb 2005
Last Updated on STN: 14 Dec 2005
Entered Medline: 28 Jul 2006

AB We investigated the local environment of water confined inside the hollow cylinder of lipid nanotubes (LNTs) by time-resolved fluorescent measurements and attenuated-total-reflectance infrared (ATR-IR) spectroscopy. The LNT was obtained by self-assembly of cardanyl glucosides in water at room temperature and had an open-ended cylindrical nanospace with a diameter of 10-15 nm, a length of 10-100 microm, and hydrophilic inner and outer surfaces. We introduced a fluorescent probe of 8-anilinonaphthalene-1-sulfonate into the confined water and observed an extremely slow dynamic Stokes shift with a correlation time of 1.26 ns, which was 2-3 orders of magnitude longer than that of bulk-phase water. From the peak shift of the fluorescent spectrum, the local solvent polarity (ET(30)) of the confined water was estimated as 50 kcal/mol, which is 20% lower than that in bulk water. ATR-IR measurements showed that the hydrogen-bond network of water inside the LNT was more developed than that in bulk water at room temperature, which is in contrast to the water in other self-assembled confined geometries, such as Aerosol-OT (AOT) reversed micelles.

L38 ANSWER 11 OF 11 MEDLINE on STN
ACCESSION NUMBER: 2003052450 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12561322
TITLE: Morphological control of helical solid bilayers in high-axial-ratio nanostructures through binary self-assembly.
AUTHOR: John George; Jung Jong Hwa; Minamikawa Hiroyuki; Yoshida Kaname; Shimizu Toshimi
CORPORATE SOURCE: CREST, Japan Science and Technology Corporation (JST), NARC, AIST, Tsukuba Central 4, 1-1-1 Higashi, Tsukuba, Ibaraki 305-8562, Japan.. george-john@aist.go.jp
SOURCE: Chemistry (Weinheim an der Bergstrasse, Germany), (2002 Dec 2) Vol. 8, No. 23, pp. 5494-500.
Journal code: 9513783. ISSN: 0947-6539.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200303
ENTRY DATE: Entered STN: 4 Feb 2003
Last Updated on STN: 11 Mar 2003
Entered Medline: 10 Mar 2003

AB Mixed molecular species of cardanyl glucoside derived from renewable resources provide nanotubes upon self-assembly in water, while the saturated homologue generated a twisted fibrous morphology. The cardanyl glucoside mixture was fractionated into four individual components in order to study their contribution to the nanotube formation. The rational control of self-assembled helical morphologies was achieved by binary self-assembling of the saturated and monoene derivatives. This method can generate a diversity of self-assembled high-axial-ratio nanostructures (HARNs), ranging from twisted ribbons and helical ribbons to nanotubes.

> d L39 1-2 ibib abs

L39 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:96530 CAPLUS
DOCUMENT NUMBER: 140:283095
TITLE: Unsaturation Effect on Gelation Behavior of Aryl Glycolipids
AUTHOR(S): John, George; Jung, Jong Hwa; Masuda, Mitsutoshi; Shimizu, Toshimi
CORPORATE SOURCE: CREST Japan Science and Technology Corporation (JST),Nanoarchitectonics Research Center (NARC), National Institute of Advanced Industrial Science and Technology (AIST), Ibaraki, 305-8562, Japan
SOURCE: Langmuir (2004), 20(6), 2060-2065
CODEN: LANGD5; ISSN: 0743-7463
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Structurally simple, renewable-resource-based cardanyl (glucoside)s [1, 1-O-3'-n-(pentadecyl) phenyl-β-D-glucopyranoside; 2, 1-O-3'-n-(8'(Z)-pentadecenyl)phenyl-β-D-glucopyranoside; 3, 1-O-3'-n-(8'(Z),11'(Z)-pentadecadienyl)phenyl-β-D-glucopyranoside, 4; 1-O-3'-n-(8'(Z),11'(Z),14'-pentadecatrienyl)phenyl-β-D-glucopyranoside; and the mixture 5] form thermally reversible transparent gels in a water/alc. mixture and a number of organic solvents, strongly influenced by the unsatn. of the aliphatic alkyl chain. DSC studies revealed that the Tgel of 1 in water/ethanol (1:1, vol/vol) gel is 69.0°, while of the introduction of a single double bond reduces the value to 30.0° in the case of monoene 2, indicating that the stability of the gel is related to the number of double bonds on the lipophilic part of the gelator. Furthermore, XRD measurements showed that the aqueous gel 1 maintains an interdigitated bilayered structure with 3.14 nm long-range ordering, and the corresponding organogel maintains an extended bilayer structure for 4.34 nm, indicating a clear difference in the aggregation behavior in different solvents.
REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 2 OF 2 MEDLINE on STN
ACCESSION NUMBER: 2005201725 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15835651
TITLE: Unsaturation effect on gelation behavior of aryl glycolipids.
AUTHOR: John George; Jung Jong Hwa; Masuda Mitsutoshi; Shimizu Toshimi
CORPORATE SOURCE: CREST, Tsukuba, Ibaraki 305-8562, Japan.. johng2@rpi.edu
SOURCE: Langmuir : the ACS journal of surfaces and colloids, (2004 Mar 16) Vol. 20, No. 6, pp. 2060-5.
Journal code: 9882736. ISSN: 0743-7463.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200512
ENTRY DATE: Entered STN: 20 Apr 2005
Last Updated on STN: 18 Dec 2005
Entered Medline: 12 Dec 2005
AB Structurally simple, renewable-resource-based cardanyl (glucoside)s [1, 1-O-3'-n-(pentadecyl) phenyl-beta-D-glucopyranoside; 2, 1-O-3'-n-(8'(Z)-pentadeceenyl)-beta-glucopyranoside; 3, 1-O-3'-n-(8'(Z),11'(Z)pentadecadienyl)phenyl-beta-D-glucopyranoside, 4; 1-O-3'-n-(8'(Z),11'(Z),14'-pentadecatrienyl)phenyl-beta-D-glucopyranoside; and the mixture 5] form thermally reversible transparent gels in a

water/alcohol mixture and a number of organic solvents, strongly influenced by the unsaturation of the aliphatic alkyl chain. DSC studies revealed that the Tgel of 1 in water/ethanol (1:1, vol/vol) gel is 69.0 degrees C, while of the introduction of a single double bond reduces the value to 30.0 degrees C in the case of monoene 2, indicating that the stability of the gel is related to the number of double bonds on the lipophilic part of the gelator. Furthermore, XRD measurements showed that the aqueous gel 1 maintains an interdigitated bilayered structure with 3.14 nm long-range ordering, and the corresponding organogel maintains an extended bilayer structure for 4.34 nm, indicating a clear difference in the aggregation behavior in different solvents.

L40 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1299979 CAPLUS
DOCUMENT NUMBER: 144:231937
TITLE: Characterization of alkyl phenols in cashew (Anacardium occidentale) products and assay of their antioxidant capacity
AUTHOR(S): Trevisan, M. T. S.; Pfundstein, B.; Haubner, R.; Wuertele, G.; Spiegelhalder, B.; Bartsch, H.; Owen, R. W.
CORPORATE SOURCE: Division of Toxicology and Cancer Risk Factors, German Cancer Research Center, Heidelberg, D-69120, Germany
SOURCE: Food and Chemical Toxicology (2006), 44(2), 188-197
CODEN: FCTOD7; ISSN: 0278-6915
PUBLISHER: Elsevier Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In this study the content of anacardic acids, cardanols and cardols in cashew apple, nut (raw and roasted) and cashew nut shell liquid (CNSL) were analyzed. The higher amts. (353.6 g/kg) of the major alkyl phenols, anacardic acids were detected in CNSL followed by cashew fiber (6.1 g/kg) while the lowest (0.65 g/kg) amts. were detected in roasted cashew nut. Cashew apple and fiber contained anacardic acids exclusively, whereas CNSL also contained an abundance of cardanols and cardols. Cashew nut (raw and roasted) also contained low amts. of hydroxy alkyl phenols. Cashew nut shell liquid was used for a basic fractionation of the alkyl phenol classes and the individual anacardic acids, major cardanols and cardols were purified to homogeneity from these fractions by semi-preparative HPLC and definitively identified by nano-ESI-MS-MS, GC-MS and NMR analyses. The hexane exts. (10 mg/mL) of all cashew products tested plus CNSL, displayed significant antioxidant capacity. Cashew nut shell liquid was the more efficient (inhibition = 100%) followed by the hexane extract of cashew fiber (94%) and apple (53%). The antioxidant capacity correlated significantly ($P < 0.05$) with the concentration of alkyl phenols in the exts. A mixture of anacardic acids (10.0 mg/mL) showed the higher antioxidant capacity (IC50 = 0.60 mM) compared to cardols and cardanols (IC50 > 4.0 mM). The data shows that of these substances, anacardic-1 was by far the more potent antioxidant (IC50 = 0.27 mM) compared to cardol-1 (IC50 = 1.71 mM) and cardanol-1 (IC50 > 4.0 mM). The antioxidant capacity of anacardic acid-1 is more related to inhibition of superoxide generation (IC50 = 0.04 mM) and xanthine oxidase (IC50 = 0.30 mM) than to scavenging of hydroxyl radicals. At present a substantial amount of cashew fiber is mostly used in formulations of animal or poultry feeds. The data presented in this study, indicates that this waste product along with CNSL, both of which contain high contents of anacardic acids, could be better utilized in functional food formulations and may represent a cheap source of cancer chemopreventive agents.
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L40 ANSWER 2 OF 2 MEDLINE on STN
ACCESSION NUMBER: 2006115414 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16095792
TITLE: Characterization of alkyl phenols in cashew (Anacardium occidentale) products and assay of their antioxidant capacity.
AUTHOR: Trevisan M T S; Pfundstein B; Haubner R; Wurtele G; Spiegelhalder B; Bartsch H; Owen R W
CORPORATE SOURCE: Division of Toxicology and Cancer Risk Factors, German Cancer Research Center, Im Neuenheimer Feld 280, D-69120 Heidelberg, Germany.
SOURCE: Food and chemical toxicology : an international journal

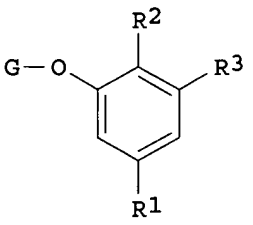
published for the British Industrial Biological Research Association, (2006 Feb) Vol. 44, No. 2, pp. 188-97.
Electronic Publication: 2005-08-10.
Journal code: 8207483. ISSN: 0278-6915.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200603
ENTRY DATE: Entered STN: 1 Mar 2006
Last Updated on STN: 16 Mar 2006
Entered Medline: 15 Mar 2006

AB In this study the content of anacardic acids, cardanols and cardols in cashew apple, nut (raw and roasted) and cashew nut shell liquid (CNSL) were analysed. The higher amounts (353.6 g/kg) of the major alkyl phenols, anacardic acids were detected in CNSL followed by cashew fibre 6.1 g/kg) while the lowest (0.65 g/kg) amounts were detected in roasted cashew nut. Cashew apple and fibre contained anacardic acids exclusively, whereas CNSL also contained an abundance of cardanols and cardols. Cashew nut (raw and roasted) also contained low amounts of hydroxy alkyl phenols. Cashew nut shell liquid was used for a basic fractionation of the alkyl phenol classes and the individual anacardic acids, major cardanols and cardols were purified to homogeneity from these fractions by semi-preparative HPLC and definitively identified by nano-ESI-MS-MS, GC-MS and NMR analyses. The hexane extracts (10 mg/ml) of all cashew products tested plus CNSL, displayed significant antioxidant capacity. Cashew nut shell liquid was the more efficient (inhibition=100%) followed by the hexane extract of cashew fibre (94%) and apple (53%). The antioxidant capacity correlated significantly ($P<0.05$) with the concentration of alkyl phenols in the extracts. A mixture of anacardic acids (10.0 mg/ml) showed the higher antioxidant capacity (IC50=0.60 mM) compared to cardols and cardanols (IC50>4.0 mM). The data shows that of these substances, anacardic-1 was by far the more potent antioxidant (IC50=0.27 mM) compared to cardol-1 (IC50=1.71 mM) and cardanol-1 (IC50>4.0 mM). The antioxidant capacity of anacardic acid-1 is more related to inhibition of superoxide generation (IC50=0.04 mM) and xanthine oxidase (IC50=0.30 mM) than to scavenging of hydroxyl radicals. At present a substantial amount of cashew fibre is mostly used in formulations of animal or poultry feeds. The data presented in this study, indicates that this waste product along with CNSL, both of which contain high contents of anacardic acids, could be better utilized in functional food formulations and may represent a cheap source of cancer chemopreventive agents.

L41 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:704743 CAPLUS
DOCUMENT NUMBER: 135:273162
TITLE: Preparation of O-glycoside type glycolipids and method for their preparation
INVENTOR(S): George, John; Masuda, Mitsutoshi; Shimizu, Toshimi
PATENT ASSIGNEE(S): Ministry of Economy, Trade and Industry; National Industrial Research Institute, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001261693	A2	20010926	JP 2000-70879	20000314

PRIORITY APPLN. INFO.: JP 2000-70879 20000314
OTHER SOURCE(S): CASREACT 135:273162; MARPAT 135:273162
GI



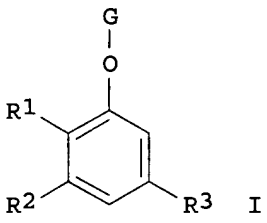
I

AB Ph glycosides (I; G = sugar residue of aldose; R1 = H, OH; R2 = H, CO2H; R3 = aliphatic (un)saturated straight-chain hydrocarbon group) are prepared by reaction of long-chain hydrocarbon group-substituted phenols I (G = H; R1 -R3 = same as above) with an aldose derivative which is fully protected and has a reactive, functionalized derivative of the reducing terminal hydroxy group. Preferably phenols are those obtained by extraction of cashew nut shells. These glycolipids are easily prepared in a large scale using readily available natural products and are useful as functional materials since they form organic thin films, closed vesicles, or fibrous aggregates when dispersed in water or aqueous alc., and thermotropic liquid crystals when used as a dry powder (no data). Thus, cashew nut oil was vacuum-distilled twice at .apprx.400 Pa, collecting the component having b.p. 220-235° to give cardanol. Cardanol (1.52 g) was dissolved in 10 mL CH2Cl2, followed by adding 3.9 g β-D-glucose pentaacetate and 0.62 mL Et2O.BF3 in the presence of 2 g mol. sieves and the resulting mixture was stirred at room temperature for 24 h to give 75% 1-O-(2,3,4,6-tetra-O-acetyl-β-D-glucopyranosyl)cardanol which (1.26 g) was stirred with a 1:4 volume mixture of 45 weight% aqueous Et3N and methanol at room temperature for 24 h to give 95% 1-O-(β-D-glucopyranosyl)cardanol.

L42 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:501807 CAPLUS
DOCUMENT NUMBER: 133:139919
TITLE: Skin cosmetics containing cardol glycosides or cardanol glycosides
INVENTOR(S): Ikemoto, Takeshi; Nakatsugawa, Hiroko; Yamazaki, Shunsuke
PATENT ASSIGNEE(S): Kanebo, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000204030	A2	20000725	JP 1999-3909	19990111

PRIORITY APPLN. INFO.: JP 1999-3909 19990111
OTHER SOURCE(S): MARPAT 133:139919
GI



I

AB Skin cosmetics contain cardol glycosides I [R1 = H, Me; R2 = OH; R3 = C15 linear (un)saturated hydrocarbyl; G = mono- or oligosaccharide residue] or cardanol glycosides I (R1, R3, G = same as above; R2 = OH). The cosmetics impart smoothness to the skin without causing skin irritation. A cream was formulated containing 3-hydroxy-5-(8,11,14-pentadecatrienyl)phenyl D-glucoside.

L44 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:685792 CAPLUS
DOCUMENT NUMBER: 139:214656
TITLE: Preparation of nano- or micro-scale self assemblies
INVENTOR(S): Kamiya, Masako; Usawa, Hirotaka; Shimizu, Toshimi; George, John
PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan; National Institute of Advanced Industrial Science and Technology
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
JP 2003245900	A2	20030902	JP 2002-49238		20020226
WO 2003072489	A1	20030904	WO 2003-JP2108		20030226
W: US					
RW: DE, FR, GB					
EP 1498386	A1	20050119	EP 2003-743031		20030226
R: DE, FR, GB					
US 2004259812	A1	20041223	US 2004-501124		20040707
JP 2006143723	A2	20060608	JP 2005-331525		20051116
PRIORITY APPLN. INFO.:			JP 2002-49238	A	20020226
			WO 2003-JP2108	W	20030226

OTHER SOURCE(S): MARPAT 139:214656
AB Title assemblies comprise GOC6H4R (G = residue of oligosaccharide made of C2-30 monosaccharides; R = C6-25 hydrocarbyl). Thus, cardanyl 2,3,4,6,2',3',6'-hepta-O-acetyl-β-D-lactoside was deprotected to give cardanyl β-D-lactoside, which was refluxed in water for 4 h and left for several days at room temperature to form self-assembled branched nanofiber with diameter .apprx.800 nm.

L49 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1946:24575 CAPLUS
DOCUMENT NUMBER: 40:24575
ORIGINAL REFERENCE NO.: 40:4841d-i
TITLE: Factors in the natural resistance of woods to termite attack
AUTHOR(S): Wolcott, Geo. N.
CORPORATE SOURCE: Agr. Expt. Sta., Univ. Puerto Rico, Rio Piedras, P.R.
SOURCE: Caribbean Forester (1946), 7, 121-34
CODEN: CARIAV; ISSN: 0366-5321
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB cf. C.A. 39, 3894.5. The enzymes of the protozoans in the digestive tract of termites digest readily cellulose but not lignin. Hence, termites avoid wood with a high lignin content and prefer wood rich in cellulose. For the same reason they eat sapwood rather than heartwood. Since other wood constituents may determine whether wood can be eaten by termites, wood impregnated with 0.01-10% solns. of the following substances was tested with the West Indian dry-wood termite, Cryptotermes brevis Walker: hematoxylin, Young fustic, morin, benzophenone, fluorenone, fluorescein, Na fluorescein, dibromo- and tetrabromofluorescein, 3-bromoacenaphthene, α-naphthoflavone, xanthone, pyrocatechol, gambier, catechol, quebracho, vanillin, crude cashew nut shell oil, 50% cardol, anacardic acid, Cu anacardate, chlorinated anacardic acid, chlorinated cardol, brucine, sucrose octaacetate; saponin, 8-hydroxyquinoline, 2-hydroxyquinoline, chloramine-T, Na tetrahydro-2-naphthalenesulfonate, Na triisopropylnaphthalenesulfonate, sulfathiazole, sulfanilamide, guaiacol, linalool, m-methoxyphenol, L-rhamnose, quinone, 1,2-naphthoquinone, Alizarin Red S, quinalizarin, anthraquinone, phenanthraquinone, phenanthrene quinhydrone, 1,5-dihydroxyanthraquinone, 1,8-dihydroxyanthraquinone, tectoquinone, alizarin, copaivic acid, caryophyllene, cedar oil, pine oil, α-terpineol, Terposol number 8, Hercolyn (hydrogenated methyl abietate), Thanite, isobornyl thiocyanoacetate, pentachlorophenol, pentabromophenol, diphenylmercury, phenylmercuric chloride, pyridylmercuric chloride, pyridylmercuric stearate, pentachlorophenolates of Ni, Al, Hg, Mg, Pb, Na, Cu, Zn and of dicyclohexylamine, chlorinated terpenes. The vegetable dyes had little deterrent effect. Saponin and brucine prevent termite attack in large amts. only. The most effective quinones are tectoquinone (β-methylanthraquinone) of the teak tree and alizarin. The termite resistance of the too volatile pine oil is greatly increased by chlorination which renders its effect more lasting.

L49 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1941:1973 CAPLUS
DOCUMENT NUMBER: 35:1973
ORIGINAL REFERENCE NO.: 35:339a-c
TITLE: Study of the nuts of acajou (Anacardium occidentale)
AUTHOR(S): Bonchristiano, Francisca Rosa
SOURCE: Rev. alimentar (1940), 4(No. 33;No. 34), 10;9-10
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB The average weight of cashew nuts is about 7 g. of which the shell is 67.5%. The composition of the nuts is H2O 10.4, cellulose 23.3, invertase, starch and N compds. 30.7, Et2O-soluble substances 34.3 and ash 1.3%. The shells contain 10.0% H2O and 38.2% substances insol. in Et2O among these resins, tanning substances, anacardic acid (C22H33O3) and cardol (C21H30O2). The nut kernels contain H2O 9.4 and oil 47.0%. The composition of the flour of the kernels when freed from fat is H2O 10.7, sucrose 13.6, starch 21.1, cellulose 22.3, N 4.9% and ash 1.3%. A complete analysis of the ash is given. The consts. of the kernel oil and of the resinous liquid from the shells, resp., are: d15 0.9174 and 1.0062, n40 1.462 and

not determined, I number (Hanus) 87.78 and 154.94, saponification number 189.00 and 110.60,
Hehner number 99.00 and not determined, Reichert-Meissl number 0.66 and 0.70.